

THE
SOUTHERN AGRICULTURIST.

OCTOBER, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*An Address delivered in Charleston, before the Agricultural Society of South-Carolina, at its anniversary meeting, on the 16th of August, 1831; by FRANCIS D. QUASH, a member.*

Mr. President and Gentlemen :

To assimilate the productions of mind, to the works of nature, whose simplicity, order, and beauty, inspire the feelings with delight, whilst they furnish the materials of improvement and happiness, is the hope that animates and sustains every writer. It is, however, peculiarly arduous to colour subjects, which are trite and familiar, with the rich and glowing tints of novelty without marring the beauty of the resemblance or the accuracy of the delineation. To entwine the wreath of fancy around the rude trunk of agriculture, like the graceful vine around the sturdy oak is a task better adapted to the practised rhetorician, than to the practical agriculturist. But after all, agriculture is a subject dearer to the hopes and happiness of man, than all the poet ever dreamt, or the philosopher defined. She feeds the hungry, clothes the naked, and winnows plenty around a smiling land. Without her aid, the natural fecundity of the earth, the genial warmth of the sun, and the regular rotation of the seasons would be of no avail; but

by her creative touch, howling deserts are converted into fertile fields covered with lowing herds, or waving with golden harvests, the blank face of the wilderness is illumined by the smiles of the cottage, or lighted up by the more imposing splendour of populous cities. At her bosom is nurtured the genius of industry, which elevated and sustained by the energy of intellect, has asserted dominion over the material world, penetrating into the bowels of the earth, traversing the waves on the wings of the wind, and making the very elements subservient to the wants of man. To review agriculture as a trade and not as an art, held in the highest veneration by the nations of antiquity, and connected with some of the most agreeable experimental sciences, would be to rob it of half its pleasure, and all its dignity.

In Egypt, China, and the Eastern hemisphere, agriculture at an early period attained great perfection, but as civilization and letters bore no corresponding improvement, curiosity was for a long time shut out from their confines, and even at present, the light of information feebly emits "its glimmering ray athwart the gloom profound." Not till the dawn of the refulgent day of Greece and Rome, did this interesting subject acquire the dignity of a place in history and in the writings of the scholars of the age. We are told that it was customary with the Greeks and Romans to send their intellectual men to travel in pursuit of the knowledge of its practice and improvements. Hesiod the most ancient of their scholars wrote on the subject, and many of his precepts of husbandry are preserved to the present day. Other learned men among them improved the knowledge and reputation of this art to such a degree, that it was deemed a most honourable employment, not below majesty itself. Thus we see that Homer, whose magnificent genius has run along the chain of intellect to the present hour, in all its original force and vividness, in his beautiful description of Achilles' shield, contrived and curiously wrought by Vulcan himself, represents the king standing in a furrow, with his royal scepter in his hand, overseeing the reapers cutting down the ripe corn, whilst his servants were spreading for him a rural repast.

To illustrate the importance of awakening the ambition as well as interest of man, to the improvement and perfection of any art, let us recur to the following historical fact. Rome in her republican day, when her

genius was almost incessantly arrayed in the armour of Mars, and all the arts of peace were in exile, suffered severely from the want of provisions. Roused by this circumstance and the opposite example of abundant Asia and Carthage, some of her distinguished public men solicited the Mantuan bard to write the celebrated *Georgics*. The effect was surprising. Men upon whom the selectest honors of the proud mistress of the world were heaped, grew enamoured with a rural life, and the Roman Villas became the seats not only of opulence, but of refinement in manners and elegance in literature. But even this is not so astonishing as the profound, varied, and practical knowledge in all the branches appertaining to agriculture, which they contain, unsurpassed by the wisdom of the present age, and in many particulars supposed to belong to the discovery of the latter. What admirable advice to a young man, commencing his agricultural life—

“ At prius ignotum ferro quam scindimus æquor
Ventos et varium cœli prædiscere morem
Cura sit, ac patrios cultusque habitus que locorum
Et quid quæque ferat regio, et quid quæque recuset.”

How many young men, who from a faulty pride, or thoughtless negligence in making themselves acquainted with the ways of culture practised by their forefathers, the course of the seasons, the genius and habits of the soil, and more especially with the characteristic traits of those who till the soil, and with the peculiar advantages and difficulties of their own plantation as to what resources are in use, and what might be made available; in fine for the want of information to repress the sanguine ebullitions of a wild expectation, fall into difficulties in a few years, from which it takes a life of intelligent industry subsequently to extricate them. When disappointment has hung her dark curtain around their prospects, they become sensible of their errors, and feel the necessity of struggling, unaided by the inspiring energy of success; still the unhappy delver sighs as he strikes on in the glimmering mine of hope.

The most valuable feature in the system of Roman agriculture was the uniform effort not only to perpetuate the fertility of the soil, but to improve it. They had recourse to the expedient of resting lands, and returning the growth to the soil, as well as their imperfect implements of husbandry would permit, considering that our superiority deriva-

ble from the science of mechanics is of modern origin. They also relieved their lands by changing the grain.

"Sic quoque mutatis requiescunt fetibus arva."

Paring and burning so invaluable to our bay lands, had the following reasons assigned for its practice—"oftimes 'tis of use to fire the barren fields, whether the land thence receives secret strength and rich nourishment, as is the case with the land that is poor; or whether every vicious disposition is exhaled by the fire, and the superfluous moisture sweats off, as happens if the soil be watery; or whether the heat opens more passages and secret pores through which the sap may be derived into the new born herbs, which is the case where the clay is stiff; or whether it hardens more and binds the gaping veins, as is applicable to a spongy soil, still the advantage is known by experience."

With respect to ploughing they were aware that land broken up early and exposed to the solvent powers of sun and air, would be more friable, and easier of cultivation, but would be less vigorous and sooner exhausted, as in their figurative mode of expression, the "sun and the air, feed on its fatness."

The practice of drill husbandry recently introduced into England with so much success, was their mode of sowing, for the express purpose of weeding the plants. The fertilizing effects of irrigation, particularly in so arid a climate as that of Italy were appreciated then, as at present, which have conferred upon the plains bordering the Po, in the vicinity of Parma and Lodi, the reputation of being the finest meadows in the world.

These views may not be particularly useful to us, but on the subject of manures, they have set us a lesson, which we have not given sufficient proofs of having learnt. The Roman stercorary, that hope of every upland crop, was constructed with peculiar care, and protected from the deteriorating influence of the atmosphere, and even the age of the manure calculated before it was applied to the different plants. They ridiculed the idea of the land wearing out—one of their best writers remarks, "It is neither just nor true to think that the nature of the ground, which the great Father and Creator of the Universe endowed with perpetual fecundity is affected with barrenness as with a constitutional disease, nor does it become a wise man to believe that the earth, which

having a divine and everlasting youth bestowed upon it, and is called the common parent of all things, should grow old like a woman." *

For the benefit of the system of manuring, American agriculturists are mainly indebted to the practice and admirable precepts of Col. Taylor. He arrested a system of husbandry, which was fast inflicting upon the lands in Virginia, the curse of barrenness, and expelling the beggared inhabitants to the Western wilderness.

In the lower section of our own State, the improvement in the cultivation of corn, and the provision crop in general, has been no less flattering than conspicuous. It has sprung from giving to our lands, naturally weak, an artificial strength capable of sustaining and maturing a greater number of plants. More manure and labour are spread over a smaller surface of ground, thereby diminishing the toil of extended operation, and yet yielding more satisfactory results.

To give perfection to this system—tillage and grazing must not be inflicted upon the same land. The system of nature practised in the forest, must be applied by art to the fields under cultivation. There must be a constant replenishment of vegetable substance, to enable the soil to endure the stimulating and exhausting qualities of most artificial manures. For the want of this, are garden soils frequently worn out by the constant accumulation of stable manure, destroying the consistency of nature, and imparting an unnatural aridity. The study of nature must enlighten the practice of art. Reflect how the particles of the various solid as well as less compact bodies that are met with in nature, and which have been frittered down and reduced by the destructible operation of the atmosphere, and the agency of other causes, being mixed and blended together in various ways and different proportions, constitute the earthy compounds which, from their being capable of absorbing the gazes and retaining moisture, as well as furnishing the substratum, afford support to the products of the vegetable kingdom, and constitute the bases of all soils, but it is the materials proceeding from the decomposition and decay of numerous organized animal and vegetable substances composing the superjacent layers of rich mould, which give the plants their vigour and growth.

Many are the existing causes, which retard the advancement of agriculture, both in its theory and practice. The

retired and unknown plans of individual effort, the want of concert of action and contrast of result, or a free and public interchange of ideas, together with the unenlightened inveteracy of habit, which clings to the mind like a shade to the substance, have kept the genius of agriculture wrapt in its swaddling clothes. What but the glorious effects of mental conflict and comparison could have so advanced and elevated the learned professions. Improvement rolls on day after day, *velut unda supervenit undam*, until an air of perfection is breathed over the whole. The rays of information, when scattered and neglected, like the dispersed particles of electricity, floating in the atmosphere, are feeble and unfelt, but combined and exerted, they produce as wonderful effects in the moral as the vollied lightnings which cleave the sullen air, produce in the natural world.

But a deeper laid and more operative evil retarding our agricultural prosperity, is the embarrassed fortunes of its followers. This, having arisen partly from the unpropitious nature of our climate, and from many other causes which it would have been difficult to counteract, may be viewed rather as a misfortune than a fault. The prosperity which beamed on our country just after the revolutionary war, and at a subsequent period, when the nations of Europe paid us well for furnishing them with the means of destroying the resources of each other, the cheapness of property and the facilities of credit, enabled our predecessors to accumulate fortunes so immense, as to puzzle and mislead speculation. Rocked in the cradle of wealth, habits of luxury and extravagance were soon matured, which, aided by the division of property, have cast their dark shade upon the hopes and fortunes of the rising generation. The poor can never be reformers, and men of education, accustomed to the refinements of wealth, will not, though the grim visage of bankruptcy scowls upon them.

Peter the Great used to say that our ancestors were the worst enemies we have, for they transmit customs, which, however, inapplicable to the present times, can only be broken down by force. The capital which should be annually expended in keeping up the improvements on a plantation and calling into salutary operation all its resources, is withheld to answer the exactions of the ghost of departed city joys. For a time men dream on in a sort of delusive slumber, fancying a thousand expedients, which seldom repay

them for the trouble of their conception, and frequently find they are wrecked, before they hear the thunder's distant roll or view the portentous figure of a cloud. Pecuniary embarrassment is calculated to destroy the efficiency and influence of any class or profession. It pinions the mind to earth, by "heaven ordained to fly at infinite," puts out the light of emulation, and extinguishes the blaze of public spirit, which, when they glow in the bosom, resemble the lambent flame playing around the head of the young Iulus, in token of his being a favourite of the gods and destined to celebrity. The sweet admonitions of success in our agricultural pursuits awaken curiosity, enliven interest, and give vigour to confidence. These become the parent of future successes. How different is the view of the case, when we early sow our hopes in expectation of a golden harvest of plenty and delight, to find by our neglect they were indeed buried.

Another evil afflicting our agricultural system, is the compulsory absence from our plantations. But this is an evil magnified by fear. Few are the situations in our country, which do not afford retreats for health within a visiting distance of home. Better far better, when there is not enough to answer the extortions of custom, as well as the wants of nature, to court the favour they offer, than wait till habit has enslaved the mind, and age impaired the energy of the body, or the rude decree of banishment is pronounced by inexorable necessity. Independence is the surest foundation on which to erect the superstructure of life; it is the friendly Mentor that will precipitate us from the rock, when we might be tempted to pause and calculate the relative value of duty and interest. It is not the curtailment of expense alone, but the important and indispensable necessity of becoming master of our business. This would silence the unwise clamours against overseers. Unacquainted as they frequently are with their business, precarious in the tenure of office, unsettled in habits of industry, unblessed by the restraints of education, and disinterested in the result, what does reason sanction us to expect. To this remark, however, there are some honourable exceptions. Men who have braved the malice of fortune and the climate, and risen on their merit to distinction and affluence.

But the greatest evil which the agricultural interest of the Southern States has to dread, arises from the unwise interference of government and the unjust operation of laws. Discarding all analysis of the verbal construction of the Constitution,* as not belonging to the occasion, and studiously avoiding the much vexed, but unsettled question as to the legality or expediency of a remedy, which has so divided our friends, let us express those feelings of regret and disappointment, which the dangers that threaten the experiment of republicanism and the agricultural and commercial prosperity of our country, so naturally inspire. Blessed as America was with a soil, rich from the hand of nature, and so boundless as to maintain a growing population for a consecutive series of centuries, intersected with bold and majestic rivers, influenced by a climate fostering the growth of all and the most valuable productions, with a government of her own choice, and a Constitution, whose beautiful features were simplicity and impartiality, what had we to expect but that justice would long reign over our land, and dispense her blessings to a free, virtuous, and united people. In addition to this our rulers had a warning in the example of England, in the individual suffering, the internal commotions, and the disastrous foreign wars, which sprung from the complicated system of her protective and restrictive laws. Yet in how brief a space, have the fair picture, which the patriots of the revolution borrowed the colours of the millenium to paint, and the fine temple erected to liberty by their unparalleled exertion and wisdom, been, the one defaced and the other polluted, not by the dangerous but ennobling impulse of ambition, but by the sordid passion of avarice. How applicable to the present age, is the farewell denunciation of Jugurtha to Rome, "farewell thou venal city, how soon would you perish, if any one could be found, rich enough to purchase you."

Political writers have differed much as to which of the three great departments of industry, Agriculture, Commerce or Manufacture, a nation is most indebted for her power and prosperity. The question concerns us not. We are essentially an agricultural people, and the Constitution was intended to guarantee to us the enjoyment and perpetuity of its blessings. Suffer the holy alliance which Providence has established between our agriculture

and commerce to be ingeniously broken and in remuneration for our blindness or weakness, our Arcadian prospects will be converted into a scene flashing with division and resounding with despair. Nothing can be left to gild our future destiny. The giant form of ruin, must soon stalk over the smoking remnants of our chartered rights, and pitch his tent on the remains of the vanished abodes of affluence and happiness. Had labour and capital been allowed to pursue their own course, the most indissoluble links of union and affection would have knit together the remotest points of our extended country. Agriculture would have furnished the rude materials, Manufacture would have wrought them into use, and Commerce wafted them over the face of the globe. They would mutually borrow and give support, like "the sweet South, that breathes o'er banks of violet, stealing, and giving odour," or like the planetary system they would harmonize in their respective orbits without impingement, reflecting a ray around the political horizon, in resemblance of that which beams from those bright luminaries, which light with living fires the vaulted roof of heaven.

That Agriculture can be, and has been materially affected by the force of laws, let us look to the pages of history. Dr. Henry remarks that as far back as the reign of Henry VII. the bad laws prohibiting the exportation of grain, induced in a measure the plan of converting farm lands into demesne or pasture lands, to the destruction of agriculture. At the same time the great extension of the use of wool in the manufactories, not only increased but rivetted the evil. From the example of England, we also derive the conclusion that when a government once undertakes to regulate labour, and has recourse to protecting, and prohibitory laws, confusion must ensue and justice must be banished. How poorly do the corn laws in favour of agriculture compensate for the inequality in taxation.—Look to the poor laws, and the regulations for the collection of the same, and you will find that the proprietors of land or rather their tenants pay three-fourths of the whole. Sir John Sinclair asserts that the agricultural interest pays two-thirds of the direct and indirect taxes, which uphold the credit system of the nation. In the hour of England's greatest need when the power of France was in the ascen-

dant and the gathering clouds of war threatened to roll desolation along her coast, and it became necessary to lay an income tax who replenished her exhausted coffers? The proceeds of the tax from the proprietors and occupiers of land amounted to six and a half millions of pound; the proceeds of it from all other classes, merchants, manufacturers, office-holders, and professional men, amounted to little more than three millions. Yet we are told that England owe her power and existence to her manufactures.

The amount of damages which we may suffer from the operation of the Tariff is not the question for Southern consideration. The wisest man in America cannot foretell the evils of the system, wrapt in the cloak of time, nor when developed can the united wisdom of all palliate or remedy them. It is enough to know, or to believe, that it is an experiment on our rights, which our rulers have no right to try. It is a sort of philosophical experiment in politics, whereby our dearest interest is laid on the *receiver*, under the most flattering promises, that before respiration is entirely pumped out, the air glass shall be removed, and it shall be restored to pristine animation and vigour. Delusive hope! let time once shape its end, and it will be as irreversible as the fiat of fate; like the fabled giants, who could be strangled in the cradle, but once allowed to attain the maturity of manhood, and they walked indifferently over the rights of others, in derision of their puny efforts to resist. The youth of our country will grow up familiarized with political heresy, and precedent will be plead, as of late, to palliate the errors or reconcile the inconsistencies of man, and if occasion should require to invest usurpation with the sacred robe of justice.

The mistake which has revolutionized all governments, and ruined majorities in administration, is an unfeeling confidence. Men reflect not in the use of arbitrary power, that they war against time, reason, and truth. Once shake the confidence of a people, or a respectable portion of them in the honesty and impartiality of a government, and it has already commenced its career to the vortex of dissolution. In the language of the unrivalled Burke—"A government of injustice and constraint is but a leaky bark, upon the political ocean; it may float for a time while all is tranquil and calm, but no sooner does the storm of opposition uplift its

voice or the waves of contention begin to roar, than it sinks of its own inability to ride out the conflict."

Agriculture, if judiciously pursued, is not only a profitable, but most delightful pursuit. The poets of old honoured agriculture as the nurse of the virtues—

"There Justice left, when she forsook mankind
The last impressions of her steps behind."

Removed from the scorching rays of ambition's sun, and the impulsive seduction of contentious scenes, to pursue competency and happiness in the shady walks of life, the sons of agriculture have every opportunity for the improvement of the head and heart.

"For Wisdom's self,
Oft seeks the sweet retir'd solitude,
Where with her best nurse, contemplation,
She plumes her feathers and lets grow her wings
That in the various bustle of resort
Were all too ruffled and sometimes impaired."

On this subject we have the highest authority, that, of the good and great Washington. In the close of an eventful life, he recorded the following opinion, "The more I am acquainted with agricultural affairs, the better I am pleased with them, inasmuch that I can no where find such great satisfaction, as in these innocent and useful pursuits. In indulging these feelings, I am led to reflect how much more delightful to an undebauched mind, is the task of making improvement on earth, than all the vain glory, which can be acquired from ravaging it by the most uninterrupted career of conquest." To a man of sense and feeling how many opportunities are afforded by a country life for the exertion of the one and the indulgence of the other; how many beings look up to him for justice and mercy; how touching are the mute but eloquent appeals of the animal creation, soliciting the mantle of his care, to cover their shivering necessities; how boundless is the field of invention to magnify the comforts and supply the wants of those whom Providence has committed to his protection. In the discharge of these sacred duties, man tastes the purest delight, "for the generous mind redoubled feels the pleasure it imparts." In the meditation on them, he might almost behold, or fancy that he sees—

"Some roseate seraph, seated on high
Who ever bends the ear to earth,
To catch the notes of benevolence
To tune them to his harp
And echo them in harmonies divine
Up to the throne of Grace."

ART. II.—*On the Cultivation of Corn with the Skimmer and Rake; by N. ROACH.*

“Charleston, September 3, 1831.

Dear Sir,—In reply to your note of the 29th ult. “requesting to be informed of the mode adopted by me in the cultivation of corn, cotton, &c. with the rake and skimmer plough,” I send you first the following details of the management of a corn crop, at my residence upon the Edisto.

In the first place, we look upon it as absolutely necessary, that we should manure every hill of corn that we plant, and that at the rate of from two to three large wagon loads to the acre; to enable us to attend to this important preliminary, we begin in the months of September, October, November and December, to collect and haul in upon our horse lots, cowpens and stables, leaves, top soil, corn stalks, straw, swamp-mud, and the richest earth and scrapings from the fence corners, &c. and as soon as they are sufficiently trampled and trod upon, we continue to add additional quantities of the same materials until the 1st of February, when it is all hauled out upon the fields without regard to its roughness, or any thing like a perfect decomposition. To obtain a sufficient quantity of these materials, even when they are to be had conveniently, will require us to be actively employed at least sixty days, (selecting those that are most convenient) out of the four months above alluded to: and from six to seven wagon loads per day, with two fellows, four horses and a wagon, is considered pretty good work. I should have remarked, that in the month of January, we heap this mass of manure, into one or two large flat bodies, so that it remains about a month only for the process of decomposition to commence; in this month also, we break up all of our corn-land with the double dagon (No. 3 two horse) plough, which cuts a furrow, fourteen inches wide, and from three to six inches deep. This plough turns over and reverses the soil in a beautiful style, and to turn under a coat of weeds or hay, is preferable to any plough I ever saw. I am aware that many gentlemen are opposed to deep ploughing, and as you remark, those upon the islands cultivating a sandy soil, especially. We are, however, of opinion, that by reversing the surface

alternately, turning under hay and various litter, and by a system of manuring, we rather improve than impoverish our soil—in short, we believe, that we *make a soil*! If it were necessary or in place, many facts might be adduced in support of this passing observation—but to our detail again. Having broke up all our corn land by the end of January, we commence in February to haul out and manure upon it, and this keeps us pretty busy with our wagons and horses until the middle of March: a wagon load of manure is divided into two heaps, and each heap is thrown at the distance of sixty to eighty feet apart every way, and all over the fields: the rows are then laid off five and a half feet square, cutting a deep furrow both ways with a shovel: the corn is then dropt (four grains in a hill) at the very bottom of the furrow, and the manure thrown upon it: if the manure is too rough, it is placed in the furrow on one or both sides of the corn, covering the corn well and the manure also with earth: such manure as you would place immediately over the seed corn, is merely hid with earth to protect it from the rays of the sun, and the quantity we give to each hill, is about a hatful. As soon as the corn is up, we run the *Rake** through it, close to the corn (on the right hand) going up one row, coming down on the other, and returning through the centre of the row: we are now speaking of $5\frac{1}{2}$ feet rows two stalks, which require us to go three times in a row; if your corn is planted in four feet rows and but one stalk to the hill, then twice in a row is sufficient. By the first week in May we have already raked and cross raked our corn over three times—thinned to a stand, and thrown a little earth with the hoe to the corn, say a hoeful, briskly drawn on each side without wishing any thing like a hill to the plants at all. Our fourth ploughing then is done with the *Skimmer*,† a plough admirably adapted for the purposes of killing the grass and of throwing fresh earth to the plants. This plough also cuts a space of two feet

* The Rake Plough consists of 5 teeth placed in a triangular frame (with handles like a common plough) about two feet to each side of the triangle: the teeth shaped very much like a cooper's adze, and are made of the common two inch tire iron.

† The Skimmer is made of two pieces of $1\frac{1}{2}$ inch iron, 12 or 13 inches long each piece, and joined at one end, resembling the letter V, the extended ends measure 22 inches from the outside of each other. The right hand end is turned up about an inch and acts like a small mould-board to throw earth to the plant.

as it goes along, *never disturbs the roots* of the corn, and leaves the field as smooth as the finest garden walk. We work our corn first one way and then the other, and get through our crop every twelve or fourteen days, so that the grass cannot possibly have time to grow or interfere, and the Skimmer is generally used for the four last ploughings. In laying by corn, we never hill it, preferring two hoe-fuls of earth thrown up to the stalks as related before. Having stated already the unusual width of the furrow made by each of the above ploughs, a practical planter will readily perceive the great advantage they must have over most other ploughs, that require nearly three times as much time to break up or stir the middles, and the consequent abundance that must follow as a production, from a double quantity of the land usually cultivated to the hand. The system is so simple, so destitute of that risk which is attendant upon the working of old corn, that a fair experiment need only be tried, to ensure the most ample satisfaction and success. Instead of waiting for the ground to be in order, or upon the seasons, you commence at one end of your crop with these ploughs, go through, commence again (wet or dry) and after going over cotton, corn, and every thing, get through again in twelve or fourteen days, and with one horse to every three hands, can attend from sixteen to eighteen acres to the hand, and keep your fields like a garden.

In my next, I will give you an account of our mode of planting cotton—*flush* as well as upon beds.

Respectfully, dear Sir, your obedient servant,

N. ROACH.

ART. III.—*On the beneficial effects of the application of Soap to Fruit Trees and Grape Vines*; by GEORGE J. F. CLARKE.

“ St. Augustine, July 1, 1831.

Dear Sir,—When I began experiments here in foreign fruits generally, many varieties of each of these species of northern fruits, peaches, plums, nectarines, apricots, cher-

ries, pears, apples, &c., and several kinds of nuts, were taken in hand as well as grapes. I procured from ten to thirty varieties of each, in pairs at least, from several parts.

I was aware that the old paternal garden, though large, yet, in the middle of a city, surrounded by buildings and orange groves, must be more arid than land at a farm beyond; but I had no conception that so great could be the difference, merely from this cause, as I afterwards found; which was, that as much work as would raise ten good cabbages in this garden, would produce at least one hundred as good at the farm—the odds lay altogether in the quantity of watering required. Here, then, was a circumstance directly favourable to southern fruit; but as certainly adverse to those of a northern character.

The first spring after their being planted, the whole put out their foilage remarkably early, and fine; but, by the close of the year, the greater part were lost; and more generally so with the cherries and nuts, notwithstanding a more than common share of care to these; and in the course of a second year nearly all were annihilated.

A second assortment, about a repetition of the same, were procured, and lost in the same manner, and in nearly the same space of time.

I then assayed a third assortment, and had abandoned these to their fate—many had died, all looked miserable—when I discovered, in the spring of their second year's decline, a small white worm to hatch from a little dark egg, lodged on the bark: just the appearance of what we call, tainted flesh, a fly-blow. This little but mischievous animal, after a few gambols in the sun, buried itself in the bark. The body of each tree (from one to one and a half inch in diameter) were; from the head to the ground, and a few inches below it, thickly bespread with running ulcers, that emitted lumps of gum in wet, and a dark coloured ichor in dry weather; the intermediate bark so closely bound as to be incompressible to the thumb nail; and a few thinly scattered yellow leaves; left scarcely a hope in their favour.

However, some common yellow soap was now melted in water over a slow fire, to about the consistency of thin molasses, and applied hot with a paint brush over the whole

body and larger limbs, as one would paint a post. The effects were soon strongly marked in the softness and succulency of the bark, the stoppage of the discharge of gum and ichor, and the green colour of the succeeding leaves.

This was done early in April of last year; and by the end of May, it was plain to be seen, that the cancerated bark and wood, poisoned all around by this little worm, was completely separated from the sound by the effects of the soap, and was falling out in a brown dust, leaving a hole around each puncture made by this worm, large enough to receive the end of a man's finger. They got another coat of warm soap in June, and in the spring of this year a third coat.

They now all stand more than resuscitated and convalescent—they are greatly improved in the size of their bodies and much extended in healthy foilage; scarcely a scar of their numerous ulcers to be seen; and promising well to supply abundant and wholesome ingrafts in the approaching season. All of them flowered but the nuts and pears—they were not old enough: and many would have borne fruit this year, I believe, but for the cold and dry spring we have had. They consist of twenty-six varieties of peaches, six of nectarines, eight of plums, two of apricots, ten of apples, four of pears, two of almonds, pecans and wall-nuts: all belonging to a much more northern climate.

Soft soap, differing from the other only in the non-admixture of salt to harden it, would have been more handy; but one or two showers of rain would have washed it all off, while the hard soap, used as above, formed a coating that stood a long time, giving a portion of its mixture to each shower; thereby superadding the benefit of keeping off hordes of ants and other insects, prone to nestle about the roots, until the advancing season compelled those intruders to fix a settlement elsewhere: whereas the soft soap but drove them off for a few days when they returned. Nor is the wedge soap, nor its application, costly. The above trees, from five to eight feet high, and comprising one hundred and fifty subjects, were gone over by a lad, in a day, and but two pounds of soap used and wasted.

The softening quality of soap on the body of a grape vine is quickly shewn—an old stiff vine that it would be dangerous to bend much in dry weather, becomes so pliant as to admit of its being wound round the arm. And, indeed,

its beneficial effects as a restorative, used on the roots, bodies, and larger limbs of all perennial plants, in addition to its repulsive and destructive qualities on a host of hostile insects, cannot, I believe, be questioned. But in hot weather, it had better be kept from the leaves and tender shoots, unless much diluted. I have met with instances of its severe caustic effects on the foliage when used in a strong state at that season.

I feel so much encouraged by this application of soap, in addition to the evidence afforded by uniting the foreign and native grapes, and what must further be expected from a choice of more favourable situations, that I mean to procure again all the kinds of fruit I have so repeatedly lost, and others, in the belief, that we can enjoy many, if not the most of them. And for this purpose I have transplanted young trees, and sown the seeds of wild cherries, plums, hickories, live-oaks, &c.

You may think this is anticipating too much. But why not? The invigorating effects of the native grape-stock, on the foreign ingrafts, is a loud voiced prompter; and we have, and so has Georgia and Carolina, their wild cherries, wild plums, wild nuts, &c. to engraft on; and soap, and cool and covered situations to receive them. I take the liberty of making these remarks in the hope, that some of your readers may be disposed to participate in the trial: the more of us that are up and doing, at experimental culture the better. Try any thing—try every thing—but do it independently. Trite prejudices, the ready inticements of a mistaken analogy, the rigid rules of mathematical structures, are but clogs to agricultural inquiries.

Cobbett very pertinently remarks. "A great deal has been said about the *season for grafting*; and Marshall tells the English that it must not be done until the sap in the stock is *just ready to flow freely*. He had never seen, as I have, an American negro sitting by a hot six plated stove grafting apple trees in the month of January, and then putting them away in his cave to be brought out and planted in April." My own experience convinces me, that it can be advantageously done, in our Southern climate, at any time of the year—the sooner the better, truly.

For my own part, I have long since resolved only to assist nature in making the ingredients in her own way, and

permit my cook to mix them in her's, so that I get a good plum-pudding.

With respect, your obedient servant.

GEORGE J. F. CLAKE.

ART. III.—*Observations on Horizontal Ploughing, Fruit Trees and making Wine; by A SMALL PLANTER.*

" St. Matthew's Parish, June 27th, 1831.

Mr. Editor,—Your journal "*The Southern Agriculturist*," is a valuable acquisition to the planter, and I am surprised and vexed that it has not a greater patronage, and a more extensive spread. To me it is the most interesting periodical: and I would be glad to see it read as a class book in common schools; so that the rising generation might be taught useful knowledge, while they are taught to read, and thus have an early bias for the most innocent and useful of professions.

You complain sometimes that you have not an adequate supply of original matter, that the planters are backward in forwarding the results of their practical experiments. This Sir, is owing to a few obvious causes, there are but few of us small planters who read your journal, and still fewer who are capable of putting their experiments on paper, and many of the great planters are too well off to care for any thing. Yet the productions of many of your contributors would do honour to any periodical in either hemisphere. Could the great and the small communicate to you the effect of their various efforts and experiments, you would have a supply more perhaps than would be necessary. But as the case is, we common writers mostly have common sense enough to be ashamed of exposing our illiteracy, and shrink from laying before the public eye our coarse and homely performances, especially when we are conscious that they will be placed in company with the finest and most beautiful productions of the pen. In this I state my own feelings and judge of those similarly circumstanced by

mine. For had it not been for your repeated solicitations for original articles, I should never have aspired to the honour of becoming one of your correspondents.

I see essays in several of your journals in favour of horizontal ploughing. I have been endeavouring more than twenty years to preserve the soil on the declivity of my hills by horizontal ploughing, but have failed in all my efforts except on regular inclined plains.

I expect, Sir, it would not be unnecessary for many of your readers to know that the eradication of any vegetable previous to its maturity, is very injurious, if not death to the soil that bears it. In the year 1820, I pulled up about a quarter of an acre of very rank peas, and gave them to my hogs, and the same piece of ground has produced comparatively nothing ever since. The same year I ruined another piece of ground planted in pinders, by pulling them up previous to frost. The tops after the adhering roots were taken off, were deposited in the barn for hay; the roots that remained in the ground were given to the hogs, and the ground has remained sterile ever since. This, as well as the ruined section of the pea-patch in the summer season, are two bald places in my field, producing nothing, although I manured them highly. This has since cautioned me not to clear land while the sap is up, or making pea or sweet potatoe, hay, or having the potatoe tops eat off, or the roots dug previous to frost. An old plantation philosopher has since signified to me, that the life of the land at a certain season was in the vegetables that it supported, and to eradicate the vegetables at that period, was depriving the land of its life, though this seems incredible, yet the above fact seem to verify it.

There is no part of the Atlantic States (and I am well acquainted with the most fruitful of them) can be preferred to the interior of South-Carolina for producing fruit, apples and peaches in particular. Fruit is not injured by the frost in this parish, as much as it is in the great cider districts of the North. My youngest orchard is twenty-one years old, and has never failed in bearing fruit every year since it commenced bearing. I have many flourishing peach trees more than a quarter of a century old, these had never been transplanted or pruned, their limbs and branches are long and tough, and are never so overloaded as to endanger their being broken, but will bend low on all sides

as though it were to invite one to pick their fruit and unload them; and when disburthened their limbs and branches will rise up again to their natural position. The lateral branches of a fruit tree ought never to be interrupted, they guard the body of the tree from the fatal effects of the summer's sun. The most flourishing and prosperous trees I have were never pruned. In transplanting trees of any kind it is necessary to keep in mind that, they must stand in the same position in the orchard in respect to the compass as they did in the nursery. The more root the tree has the better; but still there will be a portion of it left, for which the tree must be topped in proportion to the deficiency of the root, but this tree is to have no more pruning, the lateral branches in particular are to remain unmolested. More fruit trees are destroyed by our ignorance of the right way of managing them than by all the other causes put together. They are the children of nature, and art is often hostile to them; I have known an ignorant pruner top off more than half of the limbs of a peach tree at once, and the consequence was the few limbs that were left were so overloaded with fruit the ensuing summer is to be broken off and destroyed, and the redundancy of sap confined to the body of the tree for want of space, and limbs fomented, swelled, burst the bark in the most tender and vulnerable part near the root and a sickly exudation of substance took place; the cracks and fissures made in the bark by this said disruption were filled with worms and insects; the tree lingered till the following summer when it died and the effect was blamed as the cause.

A tree in a state of nature is never thus injured by a superabundance of fruit, witness the persimon and wild cherry, yet either of these, the persimon in particular, may be so affected by excessive pruning as to have its branches broken by a superabundance of fruit, its bark disrupted by a redundancy of sap confined and fermented, and a premature decay brought on similar to that of the peach tree just mentioned.

Two years ago, this coming peach time, I made an experiment on a small scale in drying peaches with the skin or pairing on, and succeeded better than I expected. I took the kind called open stone perfectly matured but not too soft, and after rubbing all the scuff or down off with a coarse wet cloth, divided each into halves, filled the cavities

with sugar, place them skin down on a portable scaffold (which is to facilitate their removal to and from their drying place without handling the fruit) : by this method the pores are so closed by the skin on one side, and sugar on the other, that the delicious flavour of the peach is retained in a much greater degree than in the common way.— Could drying houses, with all the necessary apparatus be established, there is no calculating the quantity of that kind of fruit which might be dried, and that two of a superior quality as respects delicacy and flavour. Proper attention paid to this subject, might make dried peaches as lucrative an article of commerce to our country as figs to Turkey, or raisins to Spain.

It seems strange to me that the true method of making Madeira wine, or rather wine a-la-mode de Madeira, should still remain a mystery to the world; especially when its principal secret, the cause of its peculiar qualities was discovered by Sir Joseph Banks and Doctor Solander, as long ago as 1768. Which was this in substance, (for I was a boy when I first read the account and have not seen the book since) that the must or new wine was obtained as expeditiously as possible, and immediately mixed with a portion of alcohol sufficient forever to prevent its fermentation; giving, without expressing it an idea of a grape bounce, but did not make known, as I recollect, the proportion of alcohol requisite for the purpose. This was reserved for Mr. John Williams, Sen. of Franklin County, North-Carolina, who after ten year reiterated fruitless efforts without the aid of uncommon learning, without any help from books, or any assistance from any writer or any other person whatever, at length, in the year 1795, completely succeeded in discovering the whole process of making wine, a-la-mode de Madeira, and that two from the native grape, which was nothing more than the mixture of the fresh unfermented juice with strong apple brandy in proportion of four of the former to one of the latter. That is one-fifth of the whole to be brandy. The most eligible method of the admixture is, previously, to put the requisite quantity of brandy into the wine receiver, so that should there not be juice enough to fill it, the mixture can wait till a sufficiency is procured without risking fermentation, which must be guarded against or the whole may be made only fit for vinegar. During the said ten years of experiment, Mr. Williams said he made

an abundance of bad wide and good vinegar. He had also collected and planted a great number of the most valuable wild grape vines around all his fences, so that by the time he finished, and before, he had fruit in abundance to begin with. He had also large apple and peach orchards, and made an abundant quantity of cider, and distilled apple and peach brandy of the best quality. After distilling the cider made from his earliest fruit, he gathered his grapes, beat and pressed them in the same manner he did his apples. His wine receivers were barrels of about 30 gallons, into each he put previously to its being filled six gallons of strong apple brandy, then poured in the fresh juice as fast as it run from the press through a strainer, till the cask was filled when it was bunged up, rolled away to its place of deposit, and the work was done as it fines itself and needs no racking off—the longer it stays on the lees the better. He likewise, by a similar process converted the juice of the apple into a wine similar in all its qualities to that of the grape. He could give his wine any flavour he pleased—for instance, should a spicy flavour be desired, he would steep the requisite quantity of the pulverized spice required in the brandy a few days previous to its admixture.

I visited Mr. Williams in the year 1796, and was at his house in the height of his vintage, and saw the whole process from the gathering of the grapes till the rolling away of the cask, and know what I have stated to be the truth, which I have been endeavouring ever since to promulgate to the utmost of my abilities, and no one yet as I know of has availed himself of the benefit of it except two or three of my neighbours.

Wine made agreeably to the above method is benefited by a warm temperature, moderate heat accelerates its maturity and greatly improves its strength, flavour, and other good qualities, for which reason Mr. Williams kept his in his garret in summer. His Pomona as well as grape wine had similar treatment. I have for some years past by the above process kept my family in wine from the grapes of a wild muskadine that overtops an oak in my yard, and from raspberries and strawberries. The muskadine wine has been highly complimented by nice judges, though not more than a year old, and age greatly improves it, some prefer the raspberry, but to me the strawberry is the best flavoured wine I ever tasted. I did intend this season to

have made a small cask of blackberry wine, but I could not procure a sufficiency of apple brandy in time: In short, the juice of any seed fruit may^{*} be converted into a wine, by having its fermentation stopped by seed-fruit brandy, and juice of any pleasant stone-fruit may be rendered a permanent and delicious cordial by having its fermentation arrested by peach or plum brandy. The juice of berries is apt to be too thick and to have a redundancy of tartar, and must be qualified by water and sugar. After the first squeezing the mash must be well sprinkled with water and resqueezed, and so on till the richest of the juice is squeezed out, then sweeten well with good sugar previous to the mixture with the brandy. One acre of bearing trees in full maturity ought to produce eight barrels of the pure juice of the apple, besides common cider, these eight barrels of juice mingled as above directed with the proportion of apple brandy, with about a dollar's worth of spices judiciously applied, will make ten barrels of Pomona wine which at one year old, will sell for at least one dollar per gallon, especially where its origin might be unknown—

At \$30 per barrel, - - - -	\$300 00
Ten days labour of a man and two boys } at \$10, board \$3, - - - - }	13 00
60 gallons of apple brandy at 30 cts. \$18, } spices, \$2, 8 barrels, \$4, - - - }	24 00
	<hr/>
	\$263 00

You think I value the Pomona wine too high. Well, suppose it would only sell for 50 cents per gallon, it would then yield a neat profit of \$113 for the labour of a man and two boys, 10 days, and the use of an acre of ground.

I am your friend and humble servant.

A SMALL PLANTER:

ART. IV.—*Queries of "Q in a Corner," relative to the culture of the Sweet Potatoe and the Management of Manure.*

"Charleston August 16th, 1831.

Dear Sir,—I have been waiting for some time with the vain hope that the inquiries I submitted through the Agriculturist, relative to the best mode of raising a provision crop, especially potatoes, would have been attended and replied to, by some of our planters. There are so many who could have done so with the greatest ease, that I must confess I feel mortified at the little courtesy they have shown, towards me. It is true, that two gentlemen have bestowed a brief notice on me, "Y Z," and "A Planter of the Lower Country," for which I really thank them, although they have not been as full as they might have been, or as I wished them to be, still, however, their wish was to impart the information I desired, and I make no doubt they will readily reply to such other interrogatories as I shall have occasion to make. But what surprises, and at the same time mortifies me, is that so little inclination has been manifested by my brother planters, to impart the information which they possess. Is it that they are indifferent to the success of others? Do they care so little for the true interest of their native State, that they are willing to witness the annual drain which takes place for the purchase of provisions and other matters—should this continue, what must be the result? With depressed marketable crops, it is our interest undoubtedly to husband our resources. We cannot now afford as in former years to raise cotton and rice wholly, and purchase all such things as we need for the use of our plantations. From the same capital we now realize, not half the profit we did in former years. In those days of prosperity, it was for our interest to cultivate these valuable staples whilst we willingly become the purchasers of the commodities necessary for our own use and comfort from our less favoured brethren. We afforded them a market in which their produce and stock were redily sold, and their industry met with a just recompense. Those days were days of peace and prosperity—how different from the present, I look back and compare our situation then, with what it is now, and I sigh as I draw the comparison. A

dark cloud hangs over us, and God only knows what our future destinies are likely to be. But still it behoves us not to despair. We must be up and doing. We can not sit idle and hope for better times, we must work, although all the earnings of our labour be transferred to others, I with some few hope for better times; these hopes may prove illusory, but still I will act as though our present struggle to free ourselves from our shackles are to have a happy issue. I will resist as far and as long as I have the power to resist what I conceive to be unjust and tyrannical usurpations, but at the same time I will bestow all the attention in my power on my domestic concerns, and give to my private affairs all the attention necessary.

I have been, Mr. Editor, for many years a *planter*, but I fear more in name than in reality. I have owned plantations and have cultivated them. I have spent every winter in the country, and have regularly visited them, and have directed when each crop should be planted, and given directions for the operations usually performed on plantations, and yet, although I have been as successful as most of my neighbours, I consider myself as a mere quack in agriculture, a mere bungler, who has for many years pursued a course of culture, without ever even considering whether it be right or wrong, whether it was the best suited to the soil and crop, I cultivated or not. I have followed what I found to be the practice of our neighbourhood, without being able to give, (were I asked) a satisfactory reason, for many of the operations which take place on my plantation—the fact is, I have never investigated the subjects. Like (as I fear) too many of our planters, I have been content to follow the practices of our ancestors, but I no longer feel disposed to follow blind-folded the opinions or practices of any one, however sanctioned by long usage or high repute. I wish to investigate for myself, but as it requires years of research and experiment, to ascertain any one point relating to agriculture, I feel disposed to avail myself of the knowledge of those who have preceded me. It is this which prompted me to put forth the inquiries contained in my last letter, and it is this which prompts me once more to intrude on your readers.

The culture of rice is better understood than that of any other of our crops, and perhaps sea-island cotton may rank next: certainly these two have been more attended to, and their

culture is better understood. Being marketable crops, and those on which the planters depended for their income, all necessary attention has been bestowed on them whilst our provision crops have been left to shift for themselves. Without manure and badly attended, it is not reasonable to suppose that much could be obtained. The average product of corn per acre in the lower country, I do not believe to be more than ten bushels, yet, more than sixty has been made on premium acres. The average product of potatoes is not more than one hundred bushels per acre, and yet from five to six hundred bushels have been made on particular acres, and I have been informed by a gentleman, of a neighbour, having made an average crop of four hundred bushels per acre: these large products were not obtained but with care and attention and high manuring. Our planters will object to this, that first, there is great difficulty in obtaining manures, and secondly, that if obtained in quantities sufficient for a few acres, yet it will be better policy to scatter this over many, rather than confine it to these few, and they contend that more will be obtained from it when used in this way than when confined to a small space. Were a planter a mere tenant at will, or had but a lease of the plantation for one or two years, certainly his object would be to make the most that he could in that time, nor would he be blameable; but where the soil is held in fee-simple, he certainly acts unwisely, who takes every thing from it, without returning any thing, and who regards more the present product than the future condition of his fields. This might be easily demonstrated, but I will not now enter upon the subject. I have another object in view, and that is to seek for information from those who have it in their power to bestow it, and as I have taken up the culture of the sweet potato, I will persevere in my inquiries respecting it, hoping that my other queries not being answered more in full, has been owing more to listlessness rather than a desire on the part of any of our planters to conceal what they know. I therefore, respectfully solicit information from them on the following points, viz:—

1st. How ought the ground to be prepared for root potatoes—is it necessary that, that immediately under the bed be compact and unbroken, or may the whole of it be ploughed up and the beds then formed?

2d. What is the best manure and in what manner is it best applied—under the list, over the list or broadcast? Has marsh or marsh mud ever been applied to either *roots* or *slips*?

3d. How should root potatoes be planted, and at what depth? Ought they to be cut or planted whole? How should they be treated when up?

4th. Is the cutting off of the vines injurious to the crop? If not, how often may they be cut without injury? If it is injurious, what remedy is there for this?

5th. How ought the vines to be planted and how attended? Have any experiments been instituted to test the best mode of planting vines—are sprouts preferable to vines?

6th. Ought they to be dug before a frost or after?

7th. What is the best mode of preserving them during winter?

8th. When fed out to stock, ought they to be cooked or given raw?

I have thus, Sir, thrown together a few queries, which may, perhaps, share the fate of those which preceded them. I hope, however, they will not, I feel anxious to gain information on every point I have submitted, and I believe they are such as are not settled even among our best planters. A discussion of them and a collection of facts relative to them cannot fail to be useful to all, and I therefore hope that every planter who can give the least information will impart it freely. The churl who retains it from bad motives, and he who gives it not, because he is careless about the success of others, are both reprehensible and ought never to solicit information from any one. I hope, however, there are few of this character.

Before taking leave of you, I have one other subject to inquire about. In your account of Dr. Ravenel's management, you have stated the vast amount of manure collected, but you have failed to tell us of its management. Will either you or Dr. Ravenel be so good as to inform me, from what distance he carts his leaves? How many loads two hands can collect and cart in per diem. Whether it is better to cart them as soon as they are raked up or to leave them in heaps until partly decomposed? After they have been in the pen for some time, does he throw them up to decompose or does he cart out the whole mass fresh from the pens? Does he continue to cart in fresh materials until the spring or to

what time? Your answer to these queries will greatly oblige me, or should you not be able to do so, I hope Dr. Ravenel will. Your's, &c.

Q IN A CORNER.

We cannot give the information requested by our correspondent, and therefore, leave it to Dr. Ravenel, who will, we hope, reply to the queries.—*Ed. So. Agri.*

ART. V.—*Results of some experiments to ascertain the effect of oil in hastening the maturity of Figs; by the EDITOR.*

(Read before the Horticultural Society of Charleston, July 13, 1831.)

Having made some few experiments in hastening the maturity of figs, by the use of oil, &c. I avail myself of the present opportunity of communicating the results to the Horticultural Society. That oiling the end of the fig for the purpose of hastening its maturity, was practised by the Italians, I had read many years ago, but by whom the fact is related, I cannot at present recollect, nor is it material. I had passed it by, without giving much credit to the tale, and although frequent opportunities occurred to test it, yet I had never done so until last summer, when I received a communication from Mr. George J. F. Clarke, on this subject, in which he stated that he had succeeded in hastening the maturity of figs by this process. I made a few experiments soon after I received this communication, but the season had passed, and they were not satisfactory. It had almost escaped my memory this season, but accidentally coming across this communication, I hastened to put it to the test of experiment.

On the 16th of June, I had the flower-ends of about a half dozen of what is known among us as the lemon fig, oiled with olive oil, and as many smeared with tallow. The largest of these were about 1 inch in diameter, the rest were generally $\frac{3}{4}$ of an inch, and some not more than a $\frac{1}{2}$ inch. This

was, at that time, the size of the fruit generally on the tree. On the third day I observed an evident enlargement of one of the figs, and on the 22d, I picked this fruit being perfectly ripe. I do not think, however, that it had that full maturity which we meet with in those ripened in the natural way, or which those had which were afterwards experimented on, but was rather like those which we find on the trees late in autumn, when almost every leaf has dropped. No alteration was perceptible in the size of the others which had been thus treated, even for several days after his one had been picked—one other, however, of those oiled, commenced swelling about the 10th day, and eight days after I had gathered the first, I picked the second. These were the only two which I obtained from my first experiment, the rest remained apparently unaffected, in fact those which had been treated with tallow, appeared to be retarded in their growth, and those which had not been experimented on, in a short time exceeded them in size.

On the 22d of June I oiled four figs, the two largest being about $1\frac{1}{2}$ inch diameter, the other two about $\frac{3}{4}$ of an inch. In this experiment the apertures of the flower-ends were merely touched, and I made use of sun-flower oil which happened to be at the time most convenient. On the third day, the enlargement of two of these figs was very evident, and on the 29th (7 days) I had the pleasure of plucking two of the finest figs I had seen this season, and finer than I recollect to have seen at any time, of the second crop. One of them measured $8\frac{1}{2}$ inch diameter, and weighed 3 oz. 5 dr. The other measured 8 inches, and weighed 3 oz. 3 dr. They were perfectly mature and had a most luscious appearance. They were exhibited to many gentlemen, who were equally surprised and gratified with the results of these experiments, and many were induced to undertake similar ones, from many of whom I have received accounts of their complete success.

Having succeeded thus far in these limited experiments, I resolved to extend them to whole limbs—accordingly on the 25th of June, I selected several, and experimented on every fruit which they respectively contained, but these experiments were varied—some had the whole of their flower-ends oiled, others had merely the apertures, others were oiled entirely over, whilst others had circles of oil drawn around the flower-end, taking care not to permit the least particle to reach

the apertures, and others were oiled all over, except the apertures which were untouched. The result of this experiment was as follows, those which had their apertures merely touched, ripened in six days—those which had the whole of their flower ends oiled, in 7 days—those which were oiled all over, in 8 or 9 days—and those which had merely a circle drawn around them, and also those which were oiled all over with the exception of their apertures, were not in the least affected. The two first were very fine, especially those which had been merely touched; but those which had been oiled all over had not either that plumpness or freshness which the others possessed, they were evidently not as perfect in their maturity as those which had had their ends only oiled. The figs which were subjected to this experiment varied from $\frac{1}{2}$ to $1\frac{1}{2}$ inches diameter.

The powerful effect of oil on this fruit was exemplified in a remarkable degree in the experiment. Every fig which was of the size of one inch diameter and upwards, immediately swelled off; the larger ones ripening in the course of 7 days, and the others successively, and all, even the smallest of these (above one inch) in the course of a fortnight. At the end of that time there was not one remaining, all having either ripened or dropped off. At present only the terminal fruit (which generally is but one on each branch, at the extreme end,) are to be found on those branches, which have been experimented on. Some of the fruit were punctured, but I do not believe that they were hastened at all in their ripening: certain it is that those which were merely touched with oil, ripened a day earlier: they (the punctured) were oiled over the whole flower-end.

The same effect was observable on these figs which I had noticed in the preceeding experiment, viz: that the largest fruit matured perfectly, and were every sweet, whilst those which were small resembled such as we find on the tree late in autumn, of medium size, and the skin not distended to its full extent, but a little shriveled. The flavour, however, differed materially, for whilst those picked late in autumn are (if the season is dry) very sweet, these on the contrary were very insipid.—They were evidently premature, were soft and had somewhat the appearance of being ripe, but possessed not the luscious flavour of the mature fruit, and dropped off at the least touch, which is not the case with those properly matured—they will hang for a day or two with-

out dropping, and seldom do until they commence rotting, unless shaken by the wind.

I was now fully convinced of the efficacy of oil in hastening the ripening of this fruit. I wished, however, to test it more fully, and to vary the experiment, both as to the agent employed, and the mode of using it. Accordingly, on the 29th, I selected several branches. The fruit of some were merely touched on the apertures of the flower-ends, others had the whole of their ends oiled, others were oiled all over, others had circles of oil drawn around their flower-ends, taking care not to permit it to come in contact with the florets at the aperture. Some were punctured and then oiled, and others were oiled and then punctured.

The agents made use of were olive oil, sun-flower oil, hogs lard and tallow. The very heavy and incessant rains we had for the whole of that week, and which have continued even until now, prevented my ascertaining with *exactness* the effect of the different agents. The fruit swelled off at the usual time, and there did not appear to be any difference between those oiled with olive and sun-flower oil. Those on which hogs lard had been used, did not appear to mature as rapidly as the others, and those to which tallow had been applied were not in the least affected for several days after the others, on the 8th day, *one* was observed gradually to change its colour and swell. This, however, I am inclined to think, was not the effect of the agent applied. Several of the fruit on the tree had about this time the same appearance, and many ripened before it. The rest thus treated remained on the tree, very triflingly enlarged, long after those experimented on with oil had been gathered.

Before they were perfectly ripe, it was perceptible, that the rains would prove injurious to them, and they rotted almost as soon as they ripened. A majority of the figs in this garden fared the same fate, but the effect in this respect has been only such as is common every season when we have much moisture. I think, however, that those which were oiled did not rot as soon, as those which ripened in the natural way, and I am inclined to think, that in moderately moist seasons, oiling will prove a preservative. The effect of the oil is to harden the skin, and the florets near to the aperture are dried up. When the fruit becomes so ripe that it commences rotting, instead of this change taking place at the apertures as is always the case in those

which ripen naturally, the aperture is found, completely closed and hard, and all the skin which has been oiled remains firm, and a separation commences exactly where the oiling has ceased.

The result of this experiment confirmed all of those I had previously made. There was no material difference that I am aware of, and I will not tire the society by repeating what has been already stated, except to make one remark on those which had been punctured. These did not mature at all earlier, they grew larger than the others, but it was in consequence of their splitting open. The puncturing is therefore not to be recommended, at least in wet seasons for these cracks let in the rain, and the fruit rots as a matter of course. The first fruit which ripened in the natural way on the tree I experimented on, was on the 6th of July, 14 days after I had picked the first fruit that had been oiled. It therefore, appears, that their maturity may certainly be hastened at least a fortnight by this process, and perhaps several days may be added to this, but I did not commence my experiments early enough, and had not time, therefore, to ascertain many particulars which I am desirous of knowing. The conclusion to which I have arrived, from these experiments is, that the application of oil or lard will cause the fig to mature in from 7 to 10 days from the time of its application, provided the fig has arrived to a certain degree of maturity. That they may be obtained 14 days earlier by this process than when left to nature. That the application of tallow is of no use for this purpose. That the application of any unctuous matter to small figs is injurious, causing them not to ripen but to drop off prematurely. That when all the fruit on a limb or tree is thus treated, they are all affected, and with the exception of the terminal ones, will either ripen or drop in the course of a fortnight.—Therefore, that in hastening the maturity of this fruit, only the largest should be touched, leaving the others to be thus treated in succession or to ripen naturally. Should all on a tree be thus treated, the tree in a fortnight will present the same appearance with respect to the fruit, which is exhibited late in autumn. Whether the third crop which sometimes appear, would in such a case be brought forward and matured, remains to be tested hereafter. All of these experiments were made on lemon figs, the black fig has been experimented on with equal success.

PART II.

SELECTIONS.

ART. I.—*The Ploughman's Guide; or, the Art of Ploughing.*

[Continued from Page 482.]

It is not to be expected that a plough can be made to work, with convenience, every variety in soil and dimensions of furrow, without any alteration; but I conceive it may, by applying a coulter, share, and mould-board, adapted to the place required. Yet, whatever may be the fashion of the plough, or whatever the soil or surface may be, to which it is applied, the first thing to be observed is, that the sole be straight from heel to point.*

The next and most material points are, that, at the depth required, it run fair on the sole, and bear alike from point to heel, when the line of traction, or draught raises at an angle of about 20 or 24 degrees from the plane of the surface. And when this line goes directly through the centre of the muzzle or quadrant, to the middle or a little below the middle of that part of the coulter which is sunk in the soil, the implement may be said, in respect to depth, to be well proportioned. If it does not run and bear equally on the sole, the work cannot be so well executed;—it is more difficult to direct; and requires more power of draught than it otherwise would.

A plough is made *to go deeper* in the following ways, viz.—by lowering the back-bands, or increasing the distance of the horses;—by putting the muzzle higher in the index of the beam; by slanting, or giving the coulter a greater rake forwards;—by lengthening the sock, binding it down, or by carrying the stilts; and the reverse will make it go shallower. But of all these means, if the horses are of an ordinary size, (about 15 hands high) I would only recommend the shifting of the back-band

* There should always be a little piece of steel laid on the under part of the land-side, or under the point of the sock at least; and the point may be turned a little down, to prevent the necessity, when working in a gritty soil of going every night, or every second night, to the smithy: or rather, the ploughman, in place of doing either, should heat it in the kitchen fire, and beat down the point to the straight, as oft as it is necessary, till some other repairs are required.

and muzzle. The coulter should always have a good rake forwards; and I would without any exception, reprobate the setting of it upright, the undue lengthening of the sock, the carrying up of the stilt, or removing the horses, except on account of their extreme height.*

In regard to the lateral or side motions, the first thing to be noted is, that the plough stand upright,—a requisite equally indispensable, with that of bearing equally all along, on a straight sole. The next is that the edge of the coulter be set directly forward; at least, that the land-side of it run on a parallel line with the land-side of the head; and that there be no turning of it to the right or left, to cause the plough to take a broader, or narrower furrow-slice,—a method too frequently resorted to, without considering the bad effects, in point of resistance. Nor is this bias at all governable. It increases with the solidity, and diminishes with the looseness of the soil

There are many ways of making the plough *take a broader slice*, or giving her more land, as it is commonly called; but the only unobjectionable way is, that of making the horses go a little wider. It may be done by giving the furrow-horse the longest end of the main tree; but, consequently, the land-horse will bear more than an equal share of the draught. It may be done by hooking in, or drawing from the right side of the muzzle; which to an inch or two from the centre, may be allowable, and in general may be most practicable, but whenever carried to three or four inches, or more, is highly reprehensible; as the plough is made to go in a distorted, crooked gait, and forced on out of its natural line.† It may be done, too by setting the coulter more to the left; and this, if the edge stand as before directed may be admissible to a small extent; but if carried far out, its land-side, and the after-part only of the plates, are made to bear all the strain or friction which should fall equally, on the whole. It may also be made to take more land by turning the point of the sock to the left, as well as by carrying the feather suddenly out. The bad effects of both of these practices, have been mentioned in the preceding chapter. And lastly, the ploughman, has to a certain extent, a discretionary power of giving breadth, by pressing the handles towards the right; but it soon becomes oppres-

* Every ploughman ought to be able to tell the smith, the medium height of his horses shoulders, at the point of draught, above the working plane, as well as the distance at which he allows them to be from the muzzle; and every country smith, able to tell what length the sock ought to be, to fit the plough accordingly: and there would soon be less need for muzzles. And further a smith is just as capable of repairing a sock, without having the plough or some rule, pattern, or model of the head of it, as he is, for sizing a shoe to the hoof he has never seen.

† In drilling and horse-hoeing, either with one or two horses, this cannot always, however, be avoided.

sive to keep any set of the muscles strung; nor is it in the power of nature to do so for any length of time.

The contrary measures may be resorted to, *to give the plough less land*, and the same observations will reversely apply to any alterations on the beam and muzzle, and inclination of the steersman: but it would be a greater error to bring the coulter in, so as to point over on the sock: for the front edge of the mould-board would be forced to shave off a part of the solid land, and the sock to work its way partly under it. For the same reason, the point of the sock should never be turned to the land-side: and for reasons given in the last chapter, the feather should not under any pretence, be made to jut suddenly out, from a broad point continued for some inches back, to the same width; but in all cases, ought to commence with a point not exceeding an inch in breadth, and be continued straight back, to the width required, at an angle of not more than 30 degrees. On very stony land, no feather can be used at all, but on dry earthy soils, I would have it 12 or 15 inches long, and lengthened at a more acute angle than the above, in proportion as the land approaches to the nature of moss. For such I make it 26 or 28 long, not by lengthening the sock forwards, but in the contrary way. But to dismiss this point, if, as before said, the plough have any particular bias, she is not going well, and her motions are costly: and if the ploughman need to obviate it by a constant inclination of his body, he will not perform his work with ease, or to much purpose.

Ploughing matches have, no doubt, had their advantages: but wherever the ploughman has time, and horse-power at will, and where a sharp *aris* or corner on the slice, is made a leading criterion of proficiency, I cannot but think, that they have been very detrimental to the community at large. The study comes to be not how much should be done, but how it may be made to charm the eye; and all the arts that ingenuity can devise are put into practice in *twisting* and *bending* the irons, for the sake of making a fine corner, without regard to draught, or any thing else. Every inch the coulter goes deeper into the earth, increases the resistance that falls on it in the ratio of its square: *e. g.* if one inch in the soil required one stone weight of draught, two inches would take four stones; three inches nine, and so on. If this was generally understood, or kept in mind, I think we should not see it so oft touching the upper side, and even as deep as the under side of the sock, without any manner of use yet unfolded.

The point of the coulter should never be so far forward as the point of the sock, and always a good way behind it in stony land. The former should also point a little way to the left of the land-side of the latter.

In tough, fibrous wastes and mosses, where most part of the

resistance arises from tenacity, the coulter should approach within about half an inch of the sock; and there is less difference about the thickness of its back, if the edge is kept sharp. In all earthy lands again, where the resistance arises almost entirely from density, the coulter should be as thin at the back, as it can bear, to be strong enough, and always sparingly set in the soil. In dry crumbling leys, I would have it an inch, or an inch and a half from the sock, without piquing myself on that beauty, which may be despoiled by one night's frost, or a shower of rain; or regretting, when the seed is thrown on the ridges, the loss of the thickness of one's little finger of mould, from that proportion which remains to cover it; or putting it in competition with a saving of one-sixth or one-seventh part of the expenses, or, what is the same, of having six or seven acres turned up, in place of five or six.

In *awal* or stubble lands, to be once ploughed for a corn crop, I would have it 2 or $2\frac{1}{2}$ inches from the sock; and when ploughing such land the first time for summer-fallowing, and in the other ploughings, which the fallow requires, would have them even further asunder. It should be observed, however, that as the coulter recedes from the sock, it should point proportionally, a little further over it to the land.

In many places, too much time and too much talk is spent, in giving the plough what is called *a good cut*. This is done by kneeling the coulter to the right, immediately below that part which is received by the beam, or bending off the beam to the same side at that place, to throw the coulter out of a vertical position, and make it slant diagonally to the left: to form something less than a right-angle with the back of the sock, and to cut the furrow-slice accordingly. For the same reason, the land side of the anterior part of the sock, is twisted or bent downwards. This, in the west of Scotland, is the last effort of the blacksmith, and the highest of the ploughman's tactics, in preparing for a ploughing competition; but nevertheless, it is a very injudicious one: for if the same twist is not continued along the wrest, this most ingenious curve is rubbed off. This secret, therefore, only serves to add a little more to the burden of the horses.

The fine corner, or acute angle, no doubt, looks very well on a clean cutting ley, and serves to bury the seed a little deeper: but it has its drawbacks and limits. 1st. If carried to any great extent, in a fair-working plough, the furrow, as it is raised up by the wrest, would have its corner broken off by the solid land which hangs over it. To prevent this, a broad short feather is used, and the sock and coulter are set well forwards, that the slice may be cut clear out, and forced a little way from the land, before the wrest can render any assistance in this murderous mode of working. 2d. The slice, which appears to be 6 inches

in depth, is, in reality, only $4\frac{1}{2}$ or 5 : so that the coulter is thus made to increase about one-fifth of the whole resistance of the plough, were the slice cut at right-angles. And lastly, all that is gained by it, is only a deeper seam, or bed for the seed ; but let those who prize this, remark, that, in a seam or niche six inches deep, the seed is covered only a half, and not a whole inch deeper, than in one of five.

Nothing ought to be encouraged in the workman, that is clearly hurtful to the employer, without, at least, some evidence of counterpoising advantages. I would, therefore, earnestly entreat that every farmer, before building his hopes too much on the deep insertion of his seeds, should endeavour to find some grounds for them, from a narrow inspection of the plants in their several stages.

In the germs of beans, peas, carrots, parsnips, clover and others, it may be said, there is a descending as well as an ascending part. They have the power of sending their toproots down into the soil ; and, it has always appeared to me, that they produce a healthier stem when thinly, than when deeply covered. Wheat, oats, barley, rye, and such seeds as, in vegetating, do not carry their main stem downwards, may be generally considered to require a good hold of the ground : but I have invariably observed, that if buried about five inches deep, in land that is cold, solid, or of a damp nature, it is ten to one if the first blade ever rises above at all ; and, when it does, is slender, sickly and seldom brings a manifold increase. Nor can this be otherwise, if we allow that air, light, and heat, are necessary to the vegetable, as well as to the animal.

Even at the depth of three inches, as soon as the stalk has exhausted the grain, and must seek nourishment elsewhere, the roots that have been first set off, and a part of the stem will be found to decay, while fresh, healthy fibres spring out, within about an inch of the surface, on the action of which, alone, depends the growth and maturation of the plant. If this be admitted, it must also, that by inserting these grains above an inch and a half in the soil, we do not assist, but oppose nature.

Bent-moss, for instance, cannot be harrowed the first year, and seldom the second, that a crop is taken from it ; nor is that of any consequence : for when sown at the proper season, the crop is found to be as good without as with it. Indeed, I have several times seen the experiment made, on good earthy land, and the produce proved to be as abundant, and freer of weeds, where sown without harrowing, (if early enough to be washed in a little, by the spring rains ; and preserved from fowls) as where, on contiguous ridges, that received a complete levelling.*

* Although adverse to the deep insertion of certain seeds, excepting in land that is open, dry, and in a warm climate, I am by no means so to deep ploughing, save on moss, and the great part of old leys of every quality. If

In returning to our present subject, I have yet to say—that, when giving ley or stubble land a single furrow for a corn-crop, *the sock should never be so broad as the slice*, but an inch or two within it; except, like the bent-sock it comes a good way back on the wrest: because this breadth of feather materially augments the draught; and, by cutting the slice clean out, before being embraced by the wrest, frequently causes it to be shot aside, in place of being turned over. And if *the slices are as deep as they are broad*, or nearly so, it is to be expected, a great part of them will return back on their edge, and gape open, so as to oppose the grassy side.

It is impossible that the same form and position of a wrest, allowed to be well adapted for one soil or size of furrow, can be suitable for all; but the same mould-board will set slices of any breadth, on the same slope or bevel, if the depth is conformed. A wrest with a great spread behind, is adapted for a slice that is broad and thin; and a slice the depth of which nearly equals the breadth, cannot keep room of furrow for the next, if it is laid too far over. In a word, the bevel of the slice depends more on its own dimensions than on the angle of the wrest. Hence, as every wrest is fitted for a given proportion of difference, between the sides of the slice; and as every slice requires a certain spread at the tail of the wrest, to work it fairly there must be a *great increase of friction*, when it is too thick for the plough; and when it is too thin, the seams of a few of the first slices, at least, must stand open. And hence, too, it is unreasonable to suppose that any given form of a plough will be alike esteemed in every place.

Wrests, whether of the single, or the double moulded plough, for summer-fallowing and horse-hoeing, should be longer than those for ley land—stand at a more acute angle with the land-side of the former, and the medial line of the latter. Their front edges should altogether, or nearly approach the coulter. They should have no convexity between the upper and lower edge, but have the former merely twisted out, in a gradual manner, as it recedes from the coulter: otherwise earth will be more apt to adhere to them.

Much of what has been said may be viewed as simple and redundant, and received but coolly by the sufficiently-skilled ploughman: but he may be actuated by a more charitable feeling, on considering that compounds consist of simples, which should first be understood; and from the avowal, that the preceeding is

the soil is rich, there is little need for pulverising, and less doubt but the crop will find nourishment; and in place of profuse harrowing, of leys in particular, giving scope to the roots of the cultivated plant, the surface is either made more favourable to the growth of tender seed-weeds, or wrought into a paste, while all the remainder of the slices below is, by the the treading of the horses, made solid as a beaten path.

not offered to him, but to those who are novitiates; or, who have something to learn, and are willing to be taught.

Nothing can be more beautiful than a field commodiously laid off, and neatly ploughed. There is, even, none of men's handiworks that can please the eye more; and, at the same time, show more of its unruled accuracy, than a lawn which presents ridges of the same width, with furrow-slices running in straight, equidistant lines: and that, too, with such minute exactness, as scarcely to be surpassed by the mechanic, working by squares, rules, and plumets; and by no means equalled by the gardener, with all his lines, directors, and nice assistants.

A great many arguments might be adduced to show, wherein a ploughman deserves merit or demerit, in the various departments of that duty, which fall more immediately on himself. As, however, it is not to be supposed, that ploughmen, any more than other classes of men, should individually be possessed of the same powers of body and mind, it would be vain to look for any thing like an uniformity in their qualifications.

In all places where the art has been brought to some perfection, the great care of the young beginner is, to make the ridges straight; and this is, no doubt, a very important consideration: still he ought first to acquire dexterity in managing the team and implement, and in putting both in the most convenient order; and if afterwards he can keep his head on the centre, and go straight on the poles, himself, he cannot err far in opening up, or *fiering* the ridges. The finishing of them depends on the preciseness of his vision in meting breadths. Although, however, the slices are cut in a direct line from the unploughed land, the seams, all over the ridge, will not run in parallel lines, unless they are also cut at a regular depth, and the plough kept in one position.

It is not the man who makes the greatest ado with the horses who opens his ridge best; but more commonly he who goes steadily and directly forward himself, and keeps such a command, by the reins, as to prevent them from deviating far from the right path: yet without laying *too much stress on their precision*, or checking them suddenly from the one side to the other. And he who can take a straight furrow at first, and continue so to the last, even on a ridge of fifteen feet, will finish with one, two, or three bouts less, than one who is all along undoing and over-doing: and that, too, independently of the ease to himself and the team, and the preference of the work, in every respect.

If broad-cast ridges are of unequal breadth, bended, or zigzag, the work cannot be so uniform; and, in the turnings, much time is lost, and harm done to the land which is ploughed. And with crooked drills, there is a loss of ground, an unequal distribution of manure, if such has been applied; and the hoeings

cannot be so effectually done, where they are far distant, or done at all, without saddening the mould, and injuring the crop, where they are narrower.

In fine, the grand criterion of ease and proficiency is, that of the ploughman's walking between the stilts, and in the furrow, with a free step, and an erect body: for thus, he is more convenient for himself,—has the horses and the plough better at command; and increases not the friction, by his weight:—for thus, *he cannot go*, excepting the horses and the plough are properly adjusted and proceeding with the least possible obstruction:—and thus, too, he is more graceful to look on, than when wriggling with one foot foremost, or moving as if part of his muscles were under the domination of violent spasmodic contraction.

From carefulness, assiduity, and docility, much may be expected; but very little, from disinterestedness, stubborn pride, or self-sufficiency. Anxiety in a youth would, with me, cover many errors; but I enter an unqualified protest against all, who are either careless of, or harsh to their horses; who trifle when putting on their harness; and spend as much time as a warrior would take to buckle on his mail, in sheathing their own bodies and limbs, and by which, too, they become as much burdened, and more unwieldy. A ploughman in his ordinary garb, if exerting as he ought, where ploughing deserves the name of exertion, should be able to stand any weather that the team can face; and, surely, a reasonable master would cheerfully allow him some indulgence, after his task was over. Keen indeed must be the winds, and smoothly must the plough move, if, before he goes five hundred yards, he does not feel the blood warm in his fingers' ends. Who, then, can describe the sensations of an anxious farmer, who, finding work enough, and warmth enough, without his mete coat, is obliged to take an indignant glance at his easy-minded servant, swathed in a double-milled *tri-wauked* great coat, *leggins*, *gamashins*, and *mittens*, and waddling after the plough, like a creature without joints. Mark the man, who, with quietness, and apparent carelessness, makes good work, and—give him credit for what regards the team. But pity the oppressed animals, which drag an ill-constructed, or ill-trimmed plough, bearing, or pulling, the ploughman along; and consider, that it is managed and retarded by him, in the same manner that a ship is, which is steered—by luggage in tow.

It might be expected, that I should have here given some account of drilling and horse-hoeing: but as the modes are very different in different places; and as a ploughman, who is able to till a ridge with propriety, can find little hardship in the other, it is almost unnecessary to say any thing on that head. The most important point is, to make the horse, or horses, go, that the implement may be upright, and run fairly along the sole, when moving in the place required: but, what I have further to say,

on that subject, is reserved, till it be found convenient, to introduce some *improvements on harrows and drill-ploughs*, which, I humbly conceive, are as great, or greater than those made on the plough for ordinary purposes.

ART. II.—*Essays on Agriculture*; by F. A. ISMAR.—No. 4.

[FROM THE AMERICAN FARMER.]

Burning turfs is of great utility in wild soils or cold, deserted forest grounds. It is a kind of first cultivation, a manner of making fit the soil for culture. The rough soil is either by a digging machine cut out or rolled with an heavy, specially arranged and cutting roller, overrolled in two directions and the sods turned by the paring plough. At some distance the sods are heaped up, and at every heap there are some reserved to damp the fire. When dry weather, the heap is kindled with dry small wood, heath-plants or straw, laid at the windside and made cautiously and slowly to burn. Before the heaps are white and burnt to ashes, the fire is extinguished; and as soon as they cool sufficiently they are equally spread and ploughed under immediately. A shorter and more comfortable method is, to set fire to the roots, weeds, stubble, reeds, &c. on the soil with the current of the wind and to try only to maintain an equal fire. On wet and sour moor-grounds, also on clammy and weedy clayfields and wild waste-lands, this manner of burning is of very great service. The soil loses its acidity, wetness and state of dearth; the products of the burning mingle with the ground and the ashes of the burned materials are a great means of excitation. Every thing grows thus ordinarily. It is best to begin with rape seed, then to pass to grains which are exchanged for pasture herbs.

Water itself is also a means of ameliorating the soil. The art of watering consists, to lead in an arbitrary direction and at the due time the water into meadows and fields and which is not less important in order to prevent them from becoming marshy, to lead it immediately out when it has performed its duty. The time for letting the water remain within a meadow in order to produce the greatest and the best effect, depends on the nature of the soil and the season. Meadows are watered either in the spring or the fall. In the former case it must be done after the

snow has disappeared and when no more ice is to be expected. The watering is thus continued until the month of May, when it begins to become warm. After the hay harvest, when the meadows have again become very dry, they are again watered but merely during eight days. In the fall the water enters the meadows when the cattle have left them, which erroneously is generally done. It is the best season to water meadows, they gain more and better grass. If the water can arbitrarily be led in and out, the meadows are best overflowed during a month, they stay then dry for some days, and are again watered till it begins to freeze. If thus in the month of March the grass begins to grow strongly, it receives no more water, but at the time when it begins again to become arid it is watered during a few days, after which it is again led off, as soon as the scum appears on the meadows; for that is a sign that the grassroots begin to putrify and the meadow would be lost for the whole year if the water was not led off. A loose, black, also a clayey soil receives humidity easily and retains it a long time. On such soils therefore there is need of a moderate use of the water, of outlet ditches in order to lead the water out, as soon as it has sufficiently penetrated the earth. Gravelly or naturally dry land requires more watering than any other kind. New meadows must remain dry till fall. The manure within them from the former culture mingles in that time better with the soil, and although in the first year little hay may be harvested, the fall watering will compensate it abundantly in the next year. Draw-wells applied in rivulets or rivers, dams, and sluices or spring conductors are the ordinary means of watering. Not only meadows, but in dry summers, also grain fields, pastures and gardens can be watered in that way, and substitute rain. The best water for this object is that which pours cleanly and abundantly from the source. If in the neighbourhood is found a light green matter, or a brown and sticky one which adheres to the fingers, or if cresses grow in the neighbourhood, that water can be used during the whole summer. Very cold, chalky, swampy, or vitriolated water is very obnoxious for meadows. Such water is ameliorated when filtered through sand, or which is better, when mingled with lime or ley. Watering is of the greatest importance and utility. Toseana has become a garden by this means. With meadows as with all other fields it procures an astonishing harvest.

I have still to speak of the manner of applying manure. It must be done in due time and wholly. As soon as the dung has acquired the necessary fomentation or is ripe, the strewing and under ploughing of it is of very high importance. The abundance of the future harvest depends so much upon it that a good farmer should never indifferently trust the performance of that affair to the servants, but always direct it himself or leave it to the direction of a reasonable and faithful superintendent. The

construction of the dung cart must be so as to lose nothing on the way; it must therefore be closed below. All carts should also contain an equal quantity, in order to give to each field what is due to it, and to have a regular account of it. When loaded the unripe dung is to be put aside, but the ripe to be firmly trodden. All dung strata are not of the same quality, for that depends on the more or less strong food of the animals. The power of the dung would be unequal if it should be brought on the fields in strata; some places would have more manuring than others. In order to avoid this, the Swiss, whose dunghills are remarkable for order and niceness, break them vertically and bruize with a particular instrument the hill in stripes from the top to the bottom. In this way all strata are well mingled and the further advantage is attained, that the straw is cut and the manure easier strewn. On the field the dung is equally divided by rows and in heaps of the same height and distance, whereby the higher or lower situation of the soil is to be regarded; for rain and snow bring much of it in the lower parts.

The time of manuring is very easily to be known, and still in that almost the greater part of agriculturists make enormous faults. It is an old and true proverb to eat the meat when it is cooked: which here applied is as much as to say, bring the manure on the field shortly before the seed, which must be fed with it. If brought on sooner, it would be useless; sun and wind would deprive it of its best saps, or it might consume itself within the earth. The dung cart must immediately be emptied, the manure equally spread and ploughed under. That is also a reason why we ought not to carry out the manure on hot summer days, because it would be impossible to plough it down. In any other season the ploughing should never be delayed to the fourth day. This ploughing is of so great importance that a heavy, tight and clammy soil requires a repeated labour in order to mingle the crust of the field with the manure.

A good journeyman's work-field may for three years require 10 or 1200 lbs. manure; but all this must be decided by the agriculturist himself, according to the quality of the soil, the rotation and other circumstances. There is but one general rule admissible, that it is better to be too liberal than too economical with the field.

It is a general observation, made in this and in other countries, that there is so much complaint about want of manure, as there is real abundance of dung materials and dung means. I am not bold enough to assert, that this is the fault of ignorance, negligence, and laziness; but it is a truth, that no complaint is more unjust and animadvertible. There are countries, *f. i.* in China, Holland, England, Switzerland, where any thing belonging to dung is carefully preserved and painfully collected, purchased with much money, prepared, and used. The uncleanli-

ness which is observed at so many large and small farms, the stables, dunghills, the streets, and the whole neighbourhood of cities, towns and villages, proves too frequently that this spirit of improving agriculture is not generally awakened. Who, for instance, in Bucks county, Pa., can deny that, except on the turnpike, the roads are almost impassable—on foot too. There is a continual swamp; and I must confess that I am so unhandy as to have broken, in the infernal road from Giestown to the turnpike for Bristol, and on the straight road from thence to that place and Newport, in the short space of two months, a gig and a dearborn. And since the mending it is worse if it has rained. If I had a wish to express, I would pray the supervisor to be satisfied with the money he receives from the farmers, but to mend no road as he does, and thus avoid endangering the necks of the wayfarers as well as their carriages. Human population is indeed not so abundant here, but geese, ducks, and pigs, plough the roads continually. The stables, and generally the farms of a certain description, smell at the distance of a mile. The dunghill is either entirely weakened by rain or partly washed down—a large abode for pigs, hens, and other animals. The stables are like that Augius—the poor beasts mould in swamp, without air, in a bad smell; the paunches of the cows are covered with a crust of dirt—no trace of cleaning them. And if finally this miserable manure is brought on the field, it remains on it until it is mouldy or burnt, and two-thirds of its power is lost. Every thing, however useful it may be, is rejected if it has not been done by the forefathers, or if it requires labour. Nobody thinks that the collection of dung is a guarantee for the cleanliness of farms, villages, towns and cities; that all gains a more agreeable aspect; that air, houses, and men become healthier, gayer, and more moralized.

I have often thought that this care was not only an object of a good housekeeper, but of the police: but I have finally been convinced that the police's objects are fines, vexation (sometimes) of the citizens, and brilliant dinners. A city and any habitation may exist without comfort and health of the inhabitants—but without a dining police—Oh no! what would the good people do with their money? In my next number, I intend to speak of the plants.

ART. III.—*Swamp Mud.*

[FROM THE NEW-ENGLAND FARMER.]

Mud, a black or dark coloured sediment, found at the bottom of ponds, rivers, creeks, ditches, and wet sunken places. It is mostly composed of a fine vegetable mould, mixed with the substance of perished vegetables, &c., and therefore it contains much of the natural food of plants.

In ponds and rivers, this sediment is made up of fine dust, together with a rich variety of other substances, which have been wafted in the air, and have fallen into the water; together with the subtillest particles of the neighbouring soils washed down into them by rains. That is supposed to be the richest mud, which is near to the borders, and which has been alternately flooded and fermented; as it will ferment when it lies bare, in some degree.

In rivers, and in long ditches that have currents, there is a greater proportion of soil in the mud. It has been brought down from soft, mellow lands, through which the rivers pass: and some of it doubtless from beds of marle, which are often found in the banks of rivers, and which readily dissolve in the water.

Some ponds are totally dried up in a hot and dry summer; and all ponds and rivers are so diminished by a copious evaporation, as to leave part, and the richest part, of their beds uncovered. And these beds, where there has been no rapid current, are always found to contain rich mud. In some places it reaches to a considerable depth. This mud, though taken from fresh waters, has been found to be a valuable manure; more especially for dry, sandy and gravelly soils. I have known it to have as good effect as barn dung, in the culture of Indian corn, upon such soils. The advantage of it is not found to be only for one season; it meliorates the land for several years. It restores to a high piece of ground what vegetable mould, the rains, in a long course of years, have been washing away from it.

It is happy for the farmer that Providence has prepared for him these magazines of manure in all parts of the country. None but the stupid will let them lie unnoticed or unremoved. When a dry autumn happens, the prudent farmers will be very industrious in carting mud up from evaporated ponds, and other sunken places in their farms, and laying it upon their light soils especially upon high gravelly knolls; or into their barn yards, if the distance be not too great.

But with respect to using mud as a manure, the maritime farmers have the advantage above all others. For the sea ooze, which appears on the flats, and in creeks and harbours, along the shores of the sea, has all the virtues of fresh-water mud, that of sea-salt superadded, which is one of the most important in-

redients in the composition of the best manures. I might add, that it abounds, more than any other mud, with putrefied animal substances. Much of these are contained in the sea itself: and innumerable are the fowls and fish that have perished upon flats since time began; and the component parts of their bodies have been enclosed by the supervenient slime.

Mud taken from flats where there are shell-fish or even where they have formerly lived, is better for manure, than that which appears to be more unmixed. The shells among it are a valuable part of its composition. If it abound much with shells, it becomes a general manure, fit to be laid upon almost every kind of soil.

That mud, however, which is a richer manure than any other, is taken from docks, and from the sides of wharves in populous towns. For it has been greatly enriched by the scouring of foul streets, and from common sewers; as well as from an unknown quantity of animal and vegetable substances, accidentally fallen, or designedly thrown into such places.

Sea-mud may be taken up at any season, whenever the farmer has most leisure. It is a good method to draw it up on sleds from the flats in March, when the border is covered with firm ice. I have thus obtained mud from flats, with great expedition and little expense.

Mud that is newly taken up, may be laid upon grass-land. But if it is to be ploughed into the soil, it should first lie exposed to the frost of one winter. The frost will destroy its tenacity, and reduce it to a fine powder; after which it may be spread like ashes. But if it be ploughed into the soil, before it has been mellowed; it will remain in lumps for several years, and be of less advantage.

A layer of mud will be no bad ingredient in a heap of compost. But it should be contiguous to a stratum of lime, if that can be obtained. But where this is wanting, new horse dung is the best substitute, to excite a strong fermentation.

The best method of managing all sorts of mud, were it not for increasing the labour, would be to lay it in farm yards, and let it be thoroughly mixed with the dung and stale of animals. When it is so managed, the compost is excellent, and fit for almost any soil, though best for light ones. Perhaps the advantage of it is so great as to pay for the increased expenses of twice carting. For it will absorb the stale of cattle, and retain it better than straw, and other light substances.

ART. IV.—*New Chinese Mulberry ; (Morus Multicaulis.)*

[FROM THE AMERICAN FARMER.]

This newly introduced variety of mulberry for feeding silkworms is undoubtedly an important acquisition, and more particularly so to this country where silk is on the eve of becoming a staple article of production. The Editor of the American Farmer has had this variety under cultivation for two years, and has made himself acquainted with its peculiarities both as to quality and the manner of cultivating it. Not having a sufficient quantity for a full trial of feeding silkworms with it, he has been obliged to confine his experiments to occasional feedings, at which times the worms promptly left the Italian white mulberry leaf and devoured the new Chinese with avidity. The leaves of the new mulberry frequently measure a foot in length and ten inches in width. Indeed, Mrs. Parmentier, the lady of the late Andrew Parmentier of the Brooklyn nursery and garden, who has 1600 of the trees for sale, in a letter to the Editor says, that some of the leaves on the trees in that establishment measure 13 inches in length, and that the worms left six different kinds of mulberry to feed on them. Although the number of leaves on the tree is not so great as that of those on the white, we shall judge that the weight of the leaf was much greater—it is so great in fact that during a rain or after a heavy dew, the young trees are bent almost to the ground by the weight of their foliage. This mulberry bears no fruit, or rather it is so minute and so small in quantity that the propagation of it from seed is never practised. But like all other vegetables of difficult propagation by seed, it is remarkably easy of reproduction by other means. By laying down the young trees, covering them with earth, and leaving the ends of the branches out, every branch will take root and become a young tree in two or three weeks—so that every tree one year old will by proper management produce from 10 to 20 in one summer. We laid down a tree on Friday 29th July, and a part of the stock near the root containing no branches, was left out of the ground. On the Friday following two buds were seen shooting from the naked stock, and earth was then covered over the stock and around the buds. The young trees from these buds now measure 2 feet 6 inches high. This fact will serve to illustrate the great facility of propagating the *morus multicaulis* by layers. As this mulberry does not grow high, the leaves can always be gathered by hand from the ground without the aid of ladders or the danger attending the climbing of large trees. They can be planted pretty close together, and we should judge that an acre of ground would produce more foliage with this than with the white mulberry. The *morus multicaulis* being as yet quite scarce in this country,

they sell high; but every one who contemplates cultivating silk should obtain a few, and by laying them down in July, multiply them. By this means ten trees obtained this fall, would, in five years, produce one million of trees, allowing each one to produce ten every year, which we are convinced they will certainly do; that is, in the fall of 1832 there would be 100; in 1833, 1000; in 1834, 10,000; 1835, 100,000; in 1836, 1,000,000—and these we have no hesitation in saying would produce ten times as much foliage as could be produced with the same expense and labour in the same time, of the white mulberry or any other kind. We hope editors in the country will give free circulation to these facts, that the cultivators of silks, and those who contemplate entering upon that business, may avail themselves of the advantages of this mulberry in commencing their orchards. The *morus multicaulis* can be obtained of William Prince & Sons, at the Linnæan Botanic garden at Flushing, New-York, of Mrs. Parmentier, at the Horticultural Botanic Garden at Brooklyn, N. Y. and of the Editor of the American Farmer. They are generally sold at one dollar each.

ART. V.—*Note upon the observation of Mr. Odart in relation to a method of increasing the size of Fruits, by Professor Poiteau.*

[FROM THE ANNALES DE LA SOCIÉTÉ D'HORTICULTURE DE PARIS.]

If the following experiment is confirmed, it will singularly enlarge our physiological ideas, and become a mine of prosperity to our pomologists. M. Odart observes: Having made ten years since, an annular incision, or in a single word, a circumcision, on the branch of a peach, the usual result was a great precocity, and an increase of the size, of all the fruit which it bore. I was induced the same year, to take a bud from this branch and inculcate it upon an almond stock, and it having taken, I trained the tree as an espalier the following season. This tree has constantly produced fruit, as beautiful as that which grew upon the circumcised branch, and consequently superior to that which grew naturally on the other parts of the same tree; they have preserved their firmness, which is an effect of the circumcision, and lost their bitterness, which is also an effect of this operation on the peach.

It is much to be regretted that M. Odart had not circumcised a branch of this new peach tree, in order to obtain still larger fruit, and that he had not taken a bud from this circumcised branch to obtain a third tree, with still larger fruit and so in succession, to ascertain how far nature would lend her aid in the gradual increase of the size of peaches.

POITEAU.

ART. VI.—*New Compost for Flower-Pots.*

[FROM THE AMERICAN FARMER.]

Mr. Smith,—In looking over the late numbers of the *American Farmer*, I perceive that you are more anxious to obtain practical information on the subject of agriculture, than fine spun theory. If therefore, the following experiment of my own shall be thought worthy a place in your valuable paper. I shall be amply rewarded for my labour in writing it; and if it shall be so fortunate as to add any thing to the economy of the *cultivation of the earth*, it will not be thought less valuable, perhaps, because furnished by a lady.

I have been from my childhood passionately fond of horticultural pursuits,—have devoted much time to ornamental gardening; and in my travels I have gleaned all the information in my power on the subject of fertilizing the soil. In the summer of 1824 I was in Albany, and visited Judge Buel's plantation, which was in the highest state of cultivation, and which, as every one knows, is indebted to art alone for its fertility,—having been *cut and made* from an entire swamp. I walked the whole ground over with the judge and his lady, and treasured up many curious facts, relative to gardening, which I have since practised upon, in a small way, with great success. Since that time I have also visited the most celebrated gardens in and near Boston, Hartford, New-York and Philadelphia;—but in those places they have the advantage of a naturally good soil, and do not require so much artificial aid to produce large growths of either esculent or ornamental plants, which is necessary, in order to produce the same growth from the less fertile soil, in and around Baltimore.

Last winter, soon after my arrival in Baltimore, a friend presented me with an Oleander, which had spun up to an unweildy height, but the leaves were very dwarfish: and yet small as they were, the stalk was so slender, as scarcely to be able to support the scraggy top. It looked so little like the broad-leaved, thick-limbed Oleanders I had seen at the north, that I had almost doubted its being the same species of plant. About this time I saw in Messrs Calvert & Ducatel's paper directions for obtaining

large growth of cabbages, and I resolved to try the experiment on my dwarf-leaved Oleander. Accordingly, as soon as the spring opened, I procured some common red earth, which was of a very tenacious clayey consistence—spread it upon a wide board—overlaid it with a strata of lime, which I slaked—not with sea-water according to the directions, because I could not procure it—but with rain-water into which I had previously put sufficient common salt to make it about like sea-water to the taste. I then laid another strata of earth, and then again of lime, making two of each, and the whole made moist with salt water. I then added four quarts of river sand as an improvement of my own; for, although the receipt did not name it, I took the liberty to judge that so much clay as the earth contained would adhere again in a mass without the aid of sand or something to separate its particles. The whole measured about two thirds of a bushel, one third of which was lime and sand. A servant stirred it regularly for me every day until the ingredients were well incorporated, and in three or four weeks it had entirely lost its reddish colour and had become quite black. About the middle of April I cut off the top of the Oleander, down within two feet of the roots and trimmed off all the ground shoots and some of the branches. I did not transplant it as it grew in a large tub, but removed all the earth from the top and sides of the roots—at least half a bushel of it, and filled up the tub with the new preparation. It was then placed in the yard in a southern exposure where it has ever since remained subject to the sun and rain, and copious waterings from the pump as often as the earth became dry,—and such a rapid and luxuriant growth I never witnessed. My friends told me at first that I had killed my Oleander—and I confess I had some misgivings as to the success of the experiment; but in less than two weeks after the application of the new earth, new leaves began to put forth surprisingly, and their enormous size and bright green lustre have been the subject of much comment among its numerous admirers. It is now in blossom, and on measuring the new growth which is easily ascertained by the increased size and brilliancy of the leaves, I find it to be, now the first week in July, just 16 inches. The main stalk and limbs have also increased in the same ratio. Enclosed is a specimen of the leaves, both the old and new, just as they grew upon the branch. The smallest is one of the last of last year's growth, and the largest is one that grew directly above it of this years growth. I have since tried the same experiment on geraniums and other plants growing in pots, with equal success. I send you a leaf of a rose-geranium which was a small cutting with only four very small leaves that I planted in some of the same earth the first week in May.

Would not our gardeners and farmers be abundantly rewarded for the labour and trifling expense which the like process on a larger scale, would cost them?

S.

ART. VII.—*On Curing Bacon.*

[FROM THE KENAWHA BANNER.]

Good bacon is so important an article in a Virginia family, that I am induced to offer to young house-keepers and others not practised in preparing and preserving it, the following directions; by the observation of which I think their bacon will do credit to their tables.

Hogs, weighing from one hundred and fifty to two hundred, are to be preferred, and they should be corn fed for at least five or six weeks. Corn fed pork may be distinguished by the appearance of the kidney fat, as it will be hard, and crack into small squares like beef-suet; those should be avoided whose fat is more tenacious and inclined to transparency, adhering to the fingers, and bearing the complexion of lard.

The salt should be of pure quality; that taken from the kettles when somewhat more than half boiled down, or found in the pans after cooling is most to be relied on.

To every thousand pounds of meat, put three pecks (by measure) of salt, with which a pound of pulverized saltpetre has been previously and thoroughly mixed. This composition is to be well rubbed on, and then sprinkled thickly on the outside of the meat. There is no danger of oversalting from quantity; it is length of time which has that effect.

The meat is now to be laid with the skin-side down, in good casks or troughs, with salt sprinkled over the bottom; the hams and shoulders first, and then the middlings and small pieces. On the fourth or fifth day the meat should be taken up, and again well rubbed with salt, to which should be added, whenever it can be procured, a teaspoon-full of powdered garden pepper, to each piece; and the meat replaced as before, after removing any bloody brine, or other impure matter that may have collected in the troughs or casks. At the end of two weeks, if the meat is kept without freezing, all the pieces except the hams and shoulders, will be salted sufficiently, and should then be removed, at which time the remaining pieces should be re-packed, placing those which appear least salted, lowest down. A change of position is absolutely necessary, because the pressure will prevent the passing of the brine through the meat, if not turned.

In three weeks from the first salting the shoulders are to be removed, and in four weeks the hams. Every piece on taking out for smoking, should be cleanly washed, by dipping a cloth in hot water and taking off the salt, brine and dirt; this washing promotes the drying of the meat, and further tends to equalize the saline flavour throughout the piece, and should not be omitted.

To make good bacon, the meat should be hung with the thickest part upwards, to prevent the exudation of its juices, and each piece clear of the wall, or other pieces, and there left un-

til it is quite dry. Some sound chips, with a few billets of hickory wood, or corn-cobs, make the best smoke, and also keep the house warm, which is important, for if the smoke-house is cold, all former care will be in some measure lost: a damp will settle on the bacon, and it will have a bitter flavour. Bacon should never be smoked in damp weather, as it is too often practised, as by it the meat gains nothing in colour, but acquires a bad taste; one or two good fires each day, will smoke the pieces, in precisely the same way required for salting; that is to say, hams 4 weeks, shoulders 3 weeks, and middlings and other pieces 2 weeks.

I have used red pepper with, I think, decided advantage, by throwing a few pods into each fire while smoking; this article, in salting or smoking, or in both, improves the flavour of the meat, and tends to secure it against insects. If the meat-house is dark and cool, the meat may be left hanging until wanted for use; but if otherwise, it should be taken down at the commencement of warm weather, and packed away in salt, clean hickory-ashes or oats; either will secure it from insects, or dripping, if the meat be entirely covered over, and the interstices between the pieces properly filled. The use of dry salt will not increase the saline flavor of the meat. I have known bacon very finely preserved, by preparing a strong ley of wood-ashes, concentrated by boiling, into which, when cold, the pieces were dipped.

The alkali and the oil of the meat, forms a coating of soap in all the crevices, as well as on the surface, which is an admirable protection against the insect tribe.

Some attention should be paid to the construction of the smoke house. As before observed, it should be rendered warm during the process of smoking, and if it is to retain the meat through the season, should be cool, dry and dark. A brick stove in the centre of the floor, with openings for the escape and ascent of the smoke in the sides, is among the best contrivances usual among us; but this becomes heated, and does not entirely obviate the danger arising from the occasional falling of the meat, by which houses are not unfrequently burned. It will probably be more safe and convenient to build a chimney, with a very low fire-place, as for a sitting-room, and when the chimney is carried up four feet, close it at top. A small grate placed a few inches from the hearth, will assist the burning of the wood. By having a chimney thus constructed, the blaze of the fire can never injure the house or the meat; no pieces can fall into the fire when a string or nail gives way, and whilst the blaze and smoke ascend the blind chimney, the smoke must descend again and pour into the smoke house. The plan is highly recommended for its safety and convenience, by a gentleman whose advice is entitled to great respect, and to whom I was originally indebted for several of the directions here given, the value of which I have verified in the course of my own experience.

AN ADMIRER OF GOOD BACON.

PART III.

MISCELLANEOUS INTELLIGENCE.

Mr. Legare.—By a Resolution of the Agricultural Society of St. Paul's Parish, I was directed to transmit the following for insertion in your useful journal.

The Agricultural Society of St. Paul's Parish held its anniversary meeting on Wednesday 27th day of April last, when was presented to Mr. William Wilkinson, a Silver Cup, valued at thirty dollars, for the best five acres of Cotton raised in the Parish in the year 1829, producing the greatest quantity. Also, at the same time, awarded to John Laroache, Esq. for the finest sample of Sea-Island Cotton grown in the Parish the last year, a Silver Cup, value the same; and to Lewis Morris, Esq. for the best five acres of Rice, also, a Silver Cup, valued at thirty dollars.

The Society after going through the business of the day, went into an election for Officers to serve for one year. The following gentlemen were elected:—F. Y. LEGARE, *President*; J. C. CLAIBOURNE, *Vice-President*; SAMUEL KING, *Secretary and Treasurer*.

Strawberries.—We would remind those who wish to cultivate this fine fruit in their gardens, that the beds in which they intend to set them should be well manured, and dug at least one month before the planting out the vines, which should be done early in September, in order that they may take sufficient root to prevent their being thrown out by the frost during the winter or spring. A situation that is rather moist than otherwise, is preferable, and one that is half shaded is better than one exposed to the full blaze of a meridian sun. Give the ground deep and repeated spadings, previous to setting the young plants, which should be at a distance of from twelve to eighteen inches apart.—*Genesee Farmer*.

The months of September and October are considered the best for making new plantations of Strawberries in this State, (the earlier the better.) These will, under favourable circumstances, bear a small crop the ensuing spring. *Ed. So. Agr.*

A large Peach Orchard.—A Mr. Jones at Shrewsbury, N. J. about 35 miles from New-York, has we presume the largest peach orchard in America. One is a mile and a half long, and contains 110 acres; the other contains 40 acres: in both there are about 22,000 trees. They were commenced about 9 years since, and the profits are fast raising the enterprising owner from poverty to wealth. It is said, he last year refused \$7000 for the peaches on the trees. The crop the present year is not so abundant; but the price in market is sufficiently increased, to afford him a handsome income. About two weeks since, Mr. Jones, with some of his neighbours, sent a cargo of 400 baskets to the New-York market, which readily sold at \$2 a basket. A basket contains a little short of a bushel. Some of his better peaches have since sold quick at \$5 a basket. The soil of these orchards is worth very little for any other purpose, and is poorer than the

pine plains in this vicinity. The trees, however, are well manured, and the ground kept clean from weeds and grass. The trees appeared in the best condition, and it was difficult to find a diseased one among them.

We gathered the foregoing facts from a gentleman of this town, who has lately visited these orchards.—*Springfield Republican*.

Peach Trees.—The observation in your 40th number, that peach trees in a pasture not tilled, are in a healthy and sound state, while those in the gardens and cultivated fields have decayed, appears to be confirmed by the following facts. In a door yard which has been uncultivated for eighteen years past (well covered with blue or shear grass, trodden hard) are six peach trees that were planted in 1809, in a healthy sound state, that have always produced remarkably well. About 20 rods from this yard, there is an orchard of peach trees that that was planted the same season, has been well tilled, and every possible care taken to preserve the trees from worms, notwithstanding which, the present trees are the third generation, the first two being entirely gone. On the margin of this orchard in the worm of the fence, are two peach trees of the first planting, in fine condition, and are now full of fruit. The ground about the roots is well sodded and has been so ever since they were planted. On a pasture lot with a different exposure, there are eight trees of the same age in good health. The ground has not been ploughed for twenty years. What is still more remarkable, the trees in grass ground has produced fruit in several seasons that those on tilled ground were killed by the frost. You will perhaps be surprised to learn, that I have nursed the trees in the orchard with care, pursuing the different methods recommended to protect them from injury, without profiting by a daily view of these circumstances; yet such is the fact, in it is a striking proof of the inaptitude to appreciate the operation of nature. I shall not pretend to theorise on these phenomena, but the inference appears natural that we may have overdoctored the trees, as is sometimes the case with a learned profession in curing diseases incident to human nature. It is not improbable that the remedy has been worse than the disease.—*Western Tiller*.

Planting.—The Spaniards are infinitely more careful than the French, and other nations, in planting trees, and in taking care of them; for it rarely happens, when a Spaniard eats fruit in a wood or in the open country, that he does not set the stones or the peps; and thus in the whole of their country an infinite number of fruit-trees of all kinds are found; whereas, in the French quarters you meet with none.—*Labat*.

Alpine Pasture.—A singular fact in vegetation presents itself at the Glacier of Roccosecco, which forms one of the branches of the Berneria, in Switzerland. On its summit there is a valley nearly horizontal, filled with ice; on which the avalanches have brought down masses of earth. This earth, thus resting on a basis of ice, produces a number of Alpine plants, that supply abundant and nourishing food to the flocks of the inhabitants of Samaden. There are documents which prove, that this singular pasture has been used since the year 1536.—*Foreign Review*.

Culture of Aquatic Plants in China.—The Chinese take advantage of their lakes, pools, and rivulets, by cultivating different aquatic plants in them, many of which are considered as food. The government has planted these vegetables in the lakes, marshes, and uncultivated watery grounds belonging to the state, and the emperor has introduced them into all the canals of his gardens. These and other aquatic vegetables may generally be introduced into Europe, for they are not so sensible of changes in climate as those which grow in the earth.—*Arcana of Science*.

Bees.—It has been found by observation, that Bees will not colonize while they have space to increase and work at home. We were recently called to examine a Bee house, or Apiary constructed on this principle by Mr. Munch of Putnam. It is closely covered and lined by unplanned, though jointed boards, to defend its inhabitants from the extremes of heat and cold, and divided by partitions into five chambers supported by posts about 2½ feet from the ground and about 4 feet square, and as many in height. These have doors on the backside of sufficient size, to introduce a common hive, which is placed in front of the chamber, and raised by a small block at each corner, about half an inch from the floor; and the cap is, at the same time removed. The Bees soon adjust themselves to their new habitation which seems very agreeable to them, and begin to raise their work from the top of the hive in beautiful and sparkling conical pillars which they attach to small bars passing at right angles across the chambers, at distances of about 6 inches in a perpendicular direction, and 8 to 10 inches in a horizontal one.

As their number increases, new orifices should be made at different heights for entrance and egress, and furnished beneath with an alighting board and a weather board above for turning the water. The access of insects is prevented by something like a moulding, around and near the foot of each post, so made as to hold tar, or a mixture of tar with oil.

The great advantage of a house so made, is supposed to be in the greater quantity of hiving in proportion to number of bees; since none of their time is lost, for want of room to deposit their store.

We hope this plan of Mr. Munch, for which he intends to take a patent, and his mode of managing the bee will prove useful to the public, and be gratifying to the Muskingum Agricultural Society, of which he is a member.—*Zanesville Gazette.*

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Silk-Worms.—It is stated when the leaves of the mulberry tree have been nipped by frost, or when the worms are hatched before the leaves put forth, they may be fed upon the dried leaves of the mulberry, gathered before the frost commences in autumn. The leaves must be dried in the sun, by spreading them on large cloths; after which they must be reduced to powder. When it is necessary to feed the worms, moisten the powder with water very gently, and put a thin coat of it round the young worms, which they immediately begin to feed upon. This is likely to prove useful to those who are engaged in cultivating the Silk-Worm, in our state.—*N. Y. Farmer.*

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Cocoons.—It is interesting for farmers who raise Silk-Worms, to know, that Cocoons, by being kept lose considerably of their weight. A person who made fifteen pounds this season, after keeping them a few weeks, found them reduced to twelve. This is occasioned by the dissolution of the dead chrysalis, which at last is reduced to powder. It is therefore the interest of those who have Cocoons on hand, to dispose of them as soon as possible, otherwise they will suffer loss. Cocoons do not, like wine, improve by age; on the contrary, the longer they are kept, the harder they are to reel.—*Amer. Daily Adv.*

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American Silk.—We had the pleasure a few days since of examining a fine specimen of American sewing silk from Mansfield, Con. The gentleman who exhibited it has upwards 10,000 skeins, for which he finds a ready sale at about \$8.50 per lb. He informs us that about five tons have been raised in Mansfield alone this season, and the culture is rapidly extending in Coventry and other neighbouring towns. One gentleman in Connecticut last year paid \$1500 for white mulberry trees, with which he has set out an orchard of one hundred acres. About 1000 bushels of Cocoons were sent to Philadelphia last season, and were sold for \$3 per bushel. Competent fo-

reigners are now setting up machinery in Mansfield for spinning and weaving the raw article, which has made a great demand for cocoons, and given a spur to the business. By means of machinery introduced a year or two since, the value of the raw silk has been enhanced \$1 per lb. The business is managed almost exclusively by females, requiring very particular attention for only about two weeks each year. The sales of sewing silk in Mansfield alone this year are estimated at upwards of \$85,000.—*N. E. Far.*

Manure.—Farmers might make a valuable addition to their farm-yard manure, by digging a hole at a convenient distance from their kitchen, about three or four feet deep and sufficiently wide to form a common receptacle for the various matters originating in, and about the house, extending a paved gutter from the kitchen to it, to conduct soap suds and other useless slops into it. When it becomes offensive, the offending matter should be covered with earth. That which was thrown up in digging the hole may be applied so long as it lasts. Care should be taken to prevent the water from without, from running into it. The receptacle may be hid from sight, by planting an evergreen hedge around it, leaving an opening at the back for putting in and taking out the contents.—*N. E. Farmer.*

Manure.—It is a common practice to burn couch-grass, docks, gorse, and other vegetables which are very retentive of life, or slow in decay; a more uneconomical, unscientific method of redcing them to a state beneficial to the land of which they were the refuse, cannot be devised. In breaking up heaths, such exuvix are very abundant; but in all cases, if the weeds, leaves, &c., were conveyed to a hole or pit, and with every single horse-load, and with barrow-loads in proportion, a bushel of salt and half a bushel of lime were incorporated, it would, in a few months, form a mass of decayed compost of the most fertilizing quality.—*Gard. Mag.*

Introduction of Coffee.—It was owing in some measure to a distinguished French botanist, that we are so abundantly furnished with the coffee-berry. Two plants were, under his care, taken to the West-Indies, from the botanical gardens at Paris, but on the voyage the supply of water became nearly exhausted; this person was so anxious to preserve the plants that he deprived himself of his allowance in order to water the coffee-plants.—From these two, all the coffee grown in the West Indies has sprung. Formerly, coffee could only be got at a great expense from Mocha in Arabia.—*The Mirror.*

Asparagus.—A correspondent of the *Gardener's Magazine* is of opinion that the cultivation of asparagus may be improved by irrigation, although a dry, sloping situation is generally recommended. He had three beds 60 yards long, four rows in each bed, which had been laid down about three years previous with seed. From the 1st of October 1827 to the middle of February last, the beds were, except about 4 rods, completely flooded to the depth of from 6 to 12 inches. When the water went off in the latter end of February, he ordered the beds to be forked over, with the intention of drying the ground, and getting the roots into health; but the shoots were appearing on every part, and on the 4th of March he cut 400 of good quality, and to the end of April continued to cut 100 daily.—*Art. of Scien.*

Vegetables.—Watering gives vegetables long exposed a fresher colour and a more attractive appearance; but repeated waterings are highly pernicious, as they neutralize the natural juices of some, render others bitter, and make all rapid or disagreeable.—*Scotsman.*